

CANADIAN GEOGRAPHICAL JOURNAL

DECEMBER
1943

VOL. XXVII
No. 6



PLANNING THE NEW NORTHWEST
SOME CANADIAN CITIES (Meaning and Origin of Names)
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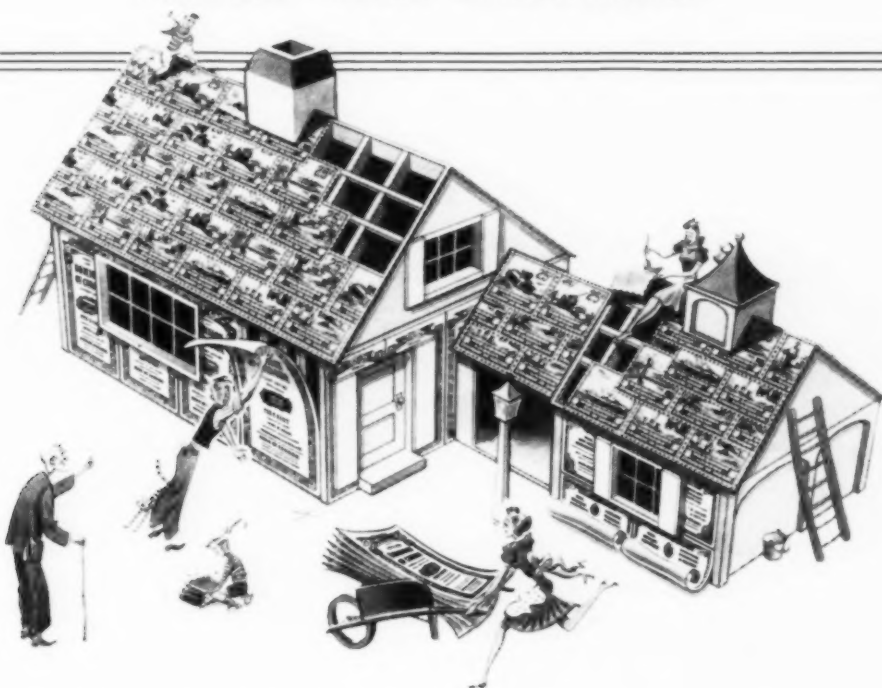

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CANADIAN GEOGRAPHICAL JOURNAL

Published monthly by
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Editor

—

Gordon M. Dallyn

This magazine is dedicated to the interpretation, in authentic and popular form, with extensive illustrations, of geography in its widest sense, first of Canada, then of the rest of the British Commonwealth, and other parts of the world in which Canada has special interest.

Contents

DECEMBER 1943

VOLUME XXVII No. 6

	PAGE
PLANNING THE NEW NORTHWEST by CHARLES CAMSELL	251
SOME CANADIAN CITIES (Meaning and Origin of Names) by J. H. CORRY	263
CANADIAN WOMEN ON ACTIVE SERVICE	264
ROYAL CANADIAN AIR FORCE (W.D.) by WING OFFICER WILLA WALKER	268
CANADIAN WOMEN'S ARMY CORPS by LT.-COL. MARGARET EATON	278
WOMEN'S ROYAL CANADIAN NAVAL SERVICE by COMMANDER ADELAIDE SINCLAIR	286
SOUTHWEST PACIFIC SPRINGBOARD by CAMPBELL DIXON	294
CANADIAN GEOGRAPHICAL JOURNAL INDEX, 1943	VII
EDITOR'S NOTE-BOOK	XI
AMONGST THE NEW BOOKS	XV

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The articles in this Journal are indexed in the *Reader's Guide to Periodical Literature* and the *Canadian Periodical Index* which may be found in any public library.

The British standard of spelling is adopted substantially as used by the Dominion Government and taught in most Canadian schools, the precise authority being the Oxford Dictionary as edited in 1936.

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PLANNING THE NEW NORTHWEST

by Charles Camsell

THE North Pacific region has acquired in the public mind a strategic importance not appreciated before Pearl Harbour. While even before the war there had been some agitation among West Coast people for an overland route to Alaska, no definite steps, except preliminary surveys, had been taken by either Canada or the United States toward the building of such a highway. Travel inside this northwest region was confined, in Canadian territory at least, as it had been for a century or more, to the waterways, chief of which were the Mackenzie and Yukon Rivers.

With the development of aeroplane travel, however, routes were opened from Edmonton northward into the Mackenzie basin, and from Edmonton to Whitehorse and Dawson, in Yukon Territory. After the outbreak of war the Government of Canada, on the recommendation of the Joint Defence Board, further developed and improved this route by the building of a line of airports at Fort St. John, Fort Nelson, Watson Lake and Whitehorse, and so the present airway came into being. With the occupation of Kiska and Attu by Japan it was obvious at once that the airways would have to be secured and serviced by an adequate ground transportation route, and an agreement consequently was made between Canada and the United States for the building by the United States Corps of Engineers of a military road extending from Dawson Creek, British Columbia, to Fairbanks, Alaska, now known as the Alaska Highway.

At the same time other undertakings such as the Canol project, which includes oil developments in the Lower Mackenzie, a pipeline west of Whitehorse, landing fields between Edmonton and Norman Wells, and a number of winter roads, were started. These projects are being carried rapidly to completion.

Developments in the North, including the provision of all these transportation facilities, have thrown a searchlight of public interest on the region, so that people have begun to ask, "What is this country like, and what about the use of these transportation facilities in its economic development after the war?"

Another question among air-minded people arises from a study of the map of

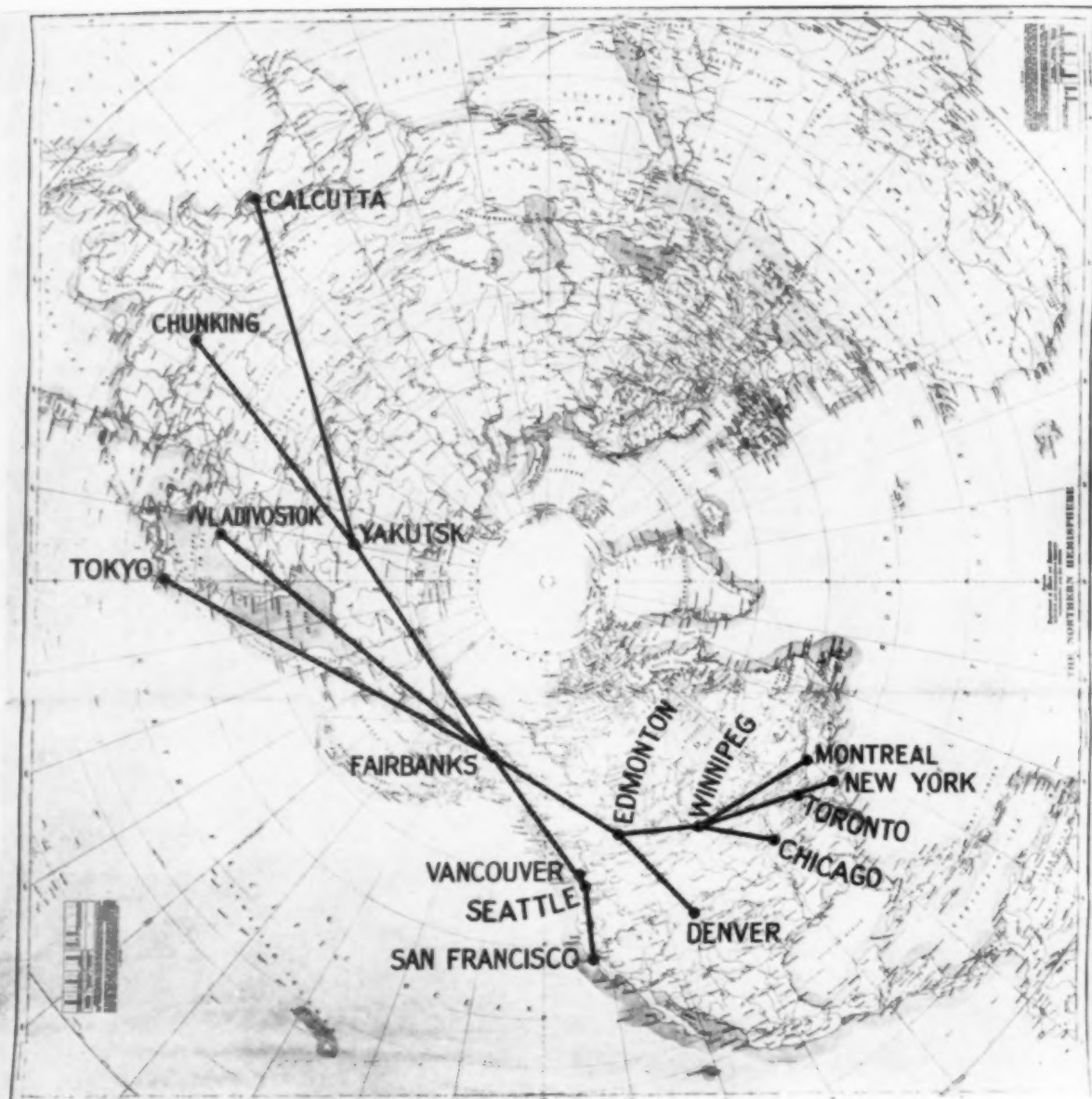
the Northern Hemisphere. It reveals that the shortest airway from the centre of the North American Continent to Japan, China, Siberia and other parts of Asia is directly through this region. What influence will the development of such an airway have upon the territory it traverses?

These questions demand an answer. That answer is being sought under the auspices of the Joint Economic Committees of Canada and the United States, which decided to sponsor a project involving a systematic study by the two countries of all the problems involved. This undertaking is known as the North Pacific Planning Project, and is being carried out by groups in Canada and the United States collaborating with each other.

The territory under joint study has an area of approximately 1,360,000 square miles, more than half of which lies in Canada. It is inhabited by less than 100,000 people, of which the greater number are in Alaska. Boundaries are not clearly defined except on the north and west, where lie the Arctic and Pacific Oceans. The southern boundary of the area is about latitude 55°N. The eastern boundary takes in the broad valleys of the Athabaska, Slave and Mackenzie Rivers.

The Canadian part of the North Pacific region includes Yukon Territory, Mackenzie District of the Northwest Territories, northern British Columbia, and northern Alberta. The major physical features of this vast region, which includes about one-fifth of the whole Dominion, trend northwest and southeast. On the east of the area, and outside of it, is an extension of the Precambrian Shield: a rocky country of numberless lakes, rolling hills, and, as you go north, little or no covering of soil or forests.

Bordering this on the west is the northward extension of the Great Plains region occupied by the northward-flowing Mackenzie River and its tributaries. This region is fairly uniform in contour. Its surface is broken only by isolated hills or ranges of low mountains, and is covered by forest to the shores of the Arctic. A great deal of the country back from the rivers is the typical northern muskeg.



Western Canada will occupy a pivotal position on the air routes of the world.

West of this is the Cordilleran region, more diversified than the other two, less uniform in temperature and precipitation, and more varied in its natural resources of forests, soils, minerals and wild life. Much of it extends above the timber line; great areas in the coast ranges are snow-covered throughout the year. A strip along the Arctic Coast is tundra.

Against this brief outline of the physical background of the area included in the North Pacific Planning Project let us consider some of the resources of the region, and the possibilities of development that are latent therein.

Wild Life Resources

It was the wild life resources of the Far North, combined with the search for the Northwest Passage and the natural Anglo-Saxon wanderlust, that first led white men into that country. These resources still remain important as a means of support for the native population. Under careful management they may be made to serve that purpose indefinitely, especially as they have now been supplemented by the introduction of reindeer, which are already an important factor in the food supply of the natives.

In addition to furnishing the natives

Emergency supplies have to go into the North mostly by aeroplane. Unloading a 400-pound spare tire at a northern lake.

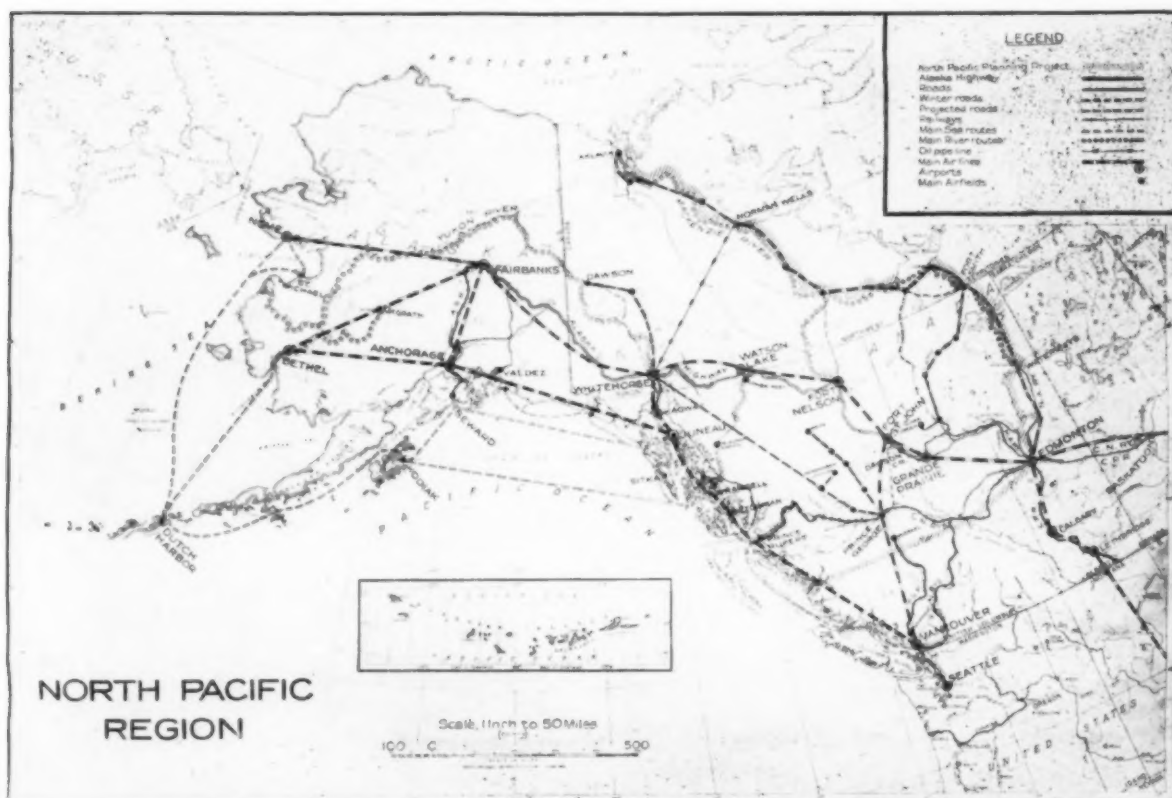


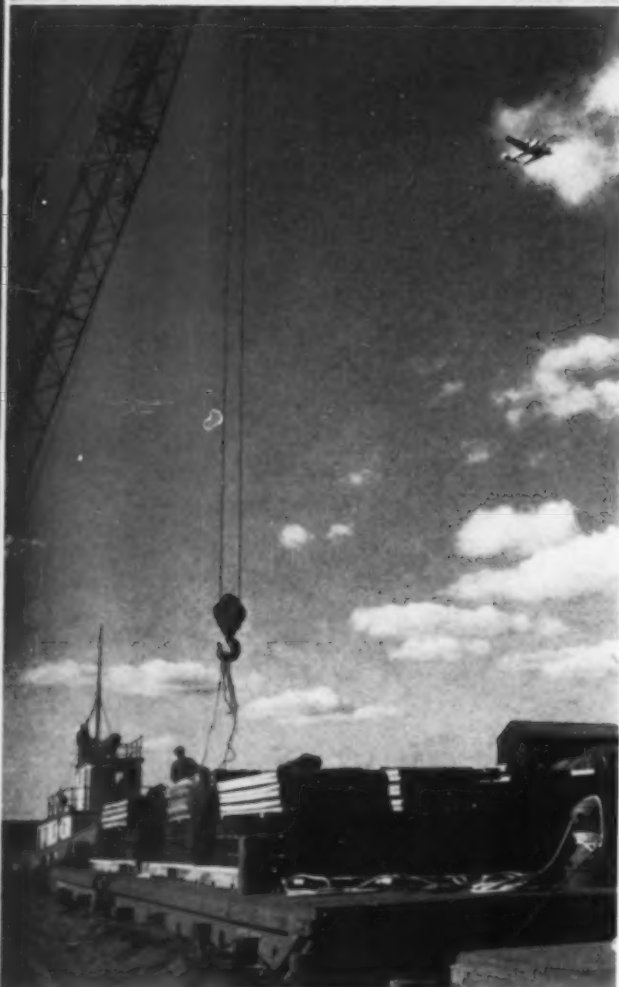
with the means of livelihood, the wild life resources make a definite contribution to the Canadian economy. The furs which are exchanged for necessities of life are an important item in Canadian trade, and although there are large areas in which hunting by sportsmen is not permitted, the game being reserved exclusively for the native and resident population, there are other districts where sport hunting is

allowed. This is a pastime which appeals to many men of substance, and in normal times can be used to attract a considerable amount of expenditure from outside sources.

Forest Resources

The forest resources of the Canadian section of the North Pacific Planning





Project area are classifiable into three main categories:

- (1) The accessible coastal forests in British Columbia;
- (2) The interior forest area in central British Columbia north of Prince George and along the Parsnip River to Finlay Forks;
- (3) The northern forest covering the balance of the area in British Columbia, northern Alberta, the Yukon, and the Northwest Territories.

The coastal forests are by far the most important; indeed, under war conditions, Sitka spruce in Queen Charlotte Islands has proven an essential item in the United Nations' aircraft production. The central interior forests in British Columbia and northern Alberta have great potential value and await only further road or rail construction. The northern forest is of poorer quality and slower growth and will possibly always be restricted in use to meeting local needs. It has, however, a vital role in that in most cases it makes local developments possible.

In the larger viewpoint of the future, the war experience has proven that wood is a strategic commodity. Under the pressure of war, advances have been made in veneers, plywoods, impregnated wood and paper board products, and cellulose plastics. Post-war science will produce types and forms of wood derivatives which will be a potent factor in building a new and better civilization. Alcohol from wood waste may yet prove a more economical fuel for motor transport than gasoline. Fodder for live stock, sugars, food for human consumption, all derived from wood, are even to-day proven possibilities. To all these purposes the forests of the North Pacific area will no doubt make their contribution.

Mineral Resources

Turning to its mineral resources, the North Pacific area lies mainly in the Cordilleran region—which is pre-eminently a mining region. The belt of rocks occupying most of British Columbia and Yukon

Top:—Auxiliary landing field and weather and ticket office

Centre:—A barge being loaded at Fort Smith for the long haul down the Mackenzie River to Norman Wells.

Left:—Stern wheelers still ply the northern waters.

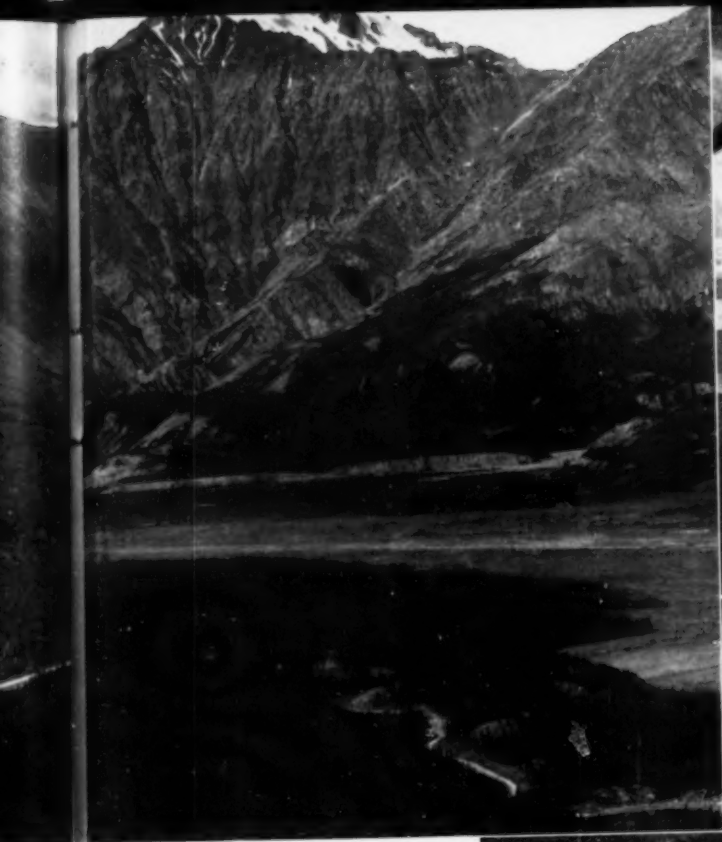
Upper right:—Convoys on the Alaska Highway

Lower right:—Mechanized equipment was used everywhere in construction.



Aerial photographs disclose
the majesty and variety of the
country traversed by the Alaska
Highway.







is an excellent prospecting field for gold, silver, zinc, lead, copper, and some of the less well-known metals such as mercury. In this belt occurred the great gold placers of Klondike and Cariboo.

East of the Cordilleras are the foothills, and the Mackenzie Valley, in which the economically valuable minerals are chiefly non-metallic minerals and fuels. Near Norman Wells, on the Mackenzie River, over thirty new wells have been drilled, mostly productive. Extensive potential oil and gas areas occur, and near McMurray there is a huge possible source of oil in the bituminous sands.

Apart from gold placers, mining operations in northern British Columbia have so far been confined largely to the westerly parts, and include mercury, tungsten, silver, and coal. In the Mackenzie River basin adjoining the North Pacific area on the east are the metallic-mineral bearing districts of Yellowknife and Great Bear Lake, producing gold, radium, uranium, silver, tungsten, copper, and lead.

The future development of the undiscovered wealth of the region will bring into existence a number of centres of population, which will in turn afford occasion for hydro-electric development and a market for such agricultural products as can be produced in their localities. Mining always has been the spearhead of

economic development in Canada's North.

Agricultural Resources

In the southern part of the area, which includes central British Columbia, the Peace River District in Alberta, and the Peace River Block in British Columbia, agriculture is already well established. The Peace River District is famous for the quality and abundance of its crops. Soil surveys and other investigations indicate that, given adequate transportation facilities, much additional settlement is practicable in this region.

In the northern parts of British Columbia and Alberta, the Northwest Territories west of the Mackenzie River system, and the Yukon, conditions are not so favourable. Nevertheless, some agriculture is possible. For many years the church missions, Hudson's Bay Company's factors, and others in the Mackenzie River basin and certain parts of the Yukon have operated small areas devoted to garden crops. While these gardens have not been wholly successful they indicate certain agricultural possibilities.

Along the highway there are no large blocks of good agricultural land, with the exception of the Nelson area and a comparatively large tract west of Whitehorse. There are also pockets of land scattered throughout the region probably adequate

Upper left:—Barges are extensively used on the water systems of the North. A general view of the barge-building yards at Fort McMurray.

Left:—Cargo of fuel for trucks and road-building equipment being loaded on the Mackenzie River.

Right:—Canadian drilling crew operating a derrick at Norman Wells.





It is sometimes dusty work driving a "cat" on northern roads.

for the garden requirements of the population.

There are other regions, for example, the Finlay Valley in British Columbia and the Hay Valley in northern Alberta, which have agricultural possibilities, dependent, of course, upon the provision of suitable transportation.

Undoubtedly there will be those who will want to go into this area when the war is over, whether to engage in farming or the development of some of its other resources. The pioneer blood still runs strong, both in our people and in those of the United States, and it is well that it does. But impulse must be tempered with judgment.

The country east of the Mackenzie Valley never can be expected to be highly populated unless there are large mineral developments in that area. It is impossible at this time to predict the extent of developments which may arise out of new discoveries.

The section west of the Mackenzie River, including the immediate river area itself, offers greater prospects. The soil is better, the climate is more moderate, there is a heavier forest crop, and, most important of all, here lie the greatest possibilities of oil development we have in Canada. In the southern part of this area are also the greatest opportunities for farming.

On the Pacific watershed we have a climate milder than that in eastern parts of the continent many degrees farther south, supported by an ample rainfall.

Growth is relatively heavy and rapid, and such agricultural areas as exist are capable of supporting a somewhat concentrated population. Here, too, are definite industrial possibilities — lumbering and the manufacture of paper, for example, the processing of fish, and the enterprises associated with metallic minerals and power developments. It is reasonable to expect that in the course of time this area will support a density of population comparable to that now found in Norway.

On the whole, I think it would be an error to look for a great rush of settlement into our Far North, as seems to be anticipated in some quarters. Certainly our North will support a larger population than at present, and, in many localities, a very much larger population; but I think it safe to say that the density of permanent population north of the fifty-fourth parallel will never be as great as that farther south.

There is another aspect, however, in which the picture may differ. That is with respect to temporary populations; the population which moves in for a few days or a few weeks to see the scenery and enjoy the freedoms and contacts of the North; in short, tourists. Few countries have such attractions to offer, and few have such unmeasured possibilities of development along that line. For generations the North has been practically shut off from the rest of the world by the difficulties of transportation. "By canoe and dog-team" may sound romantic enough, but it has little appeal to the tourist who

wants to "rough it" in comfort and with speed. Now the aeroplane has made the North available in hours instead of weeks or months. The Alaska Military Highway, and other trunk channels which may be driven through the wilderness, will in time—although not immediately—become great arteries for motorized travel. For there is a strange lure about the North. Explain it how you will, there is something inherent in the human soul which responds to the appeal of the wilderness, and which no other appeal can satisfy.

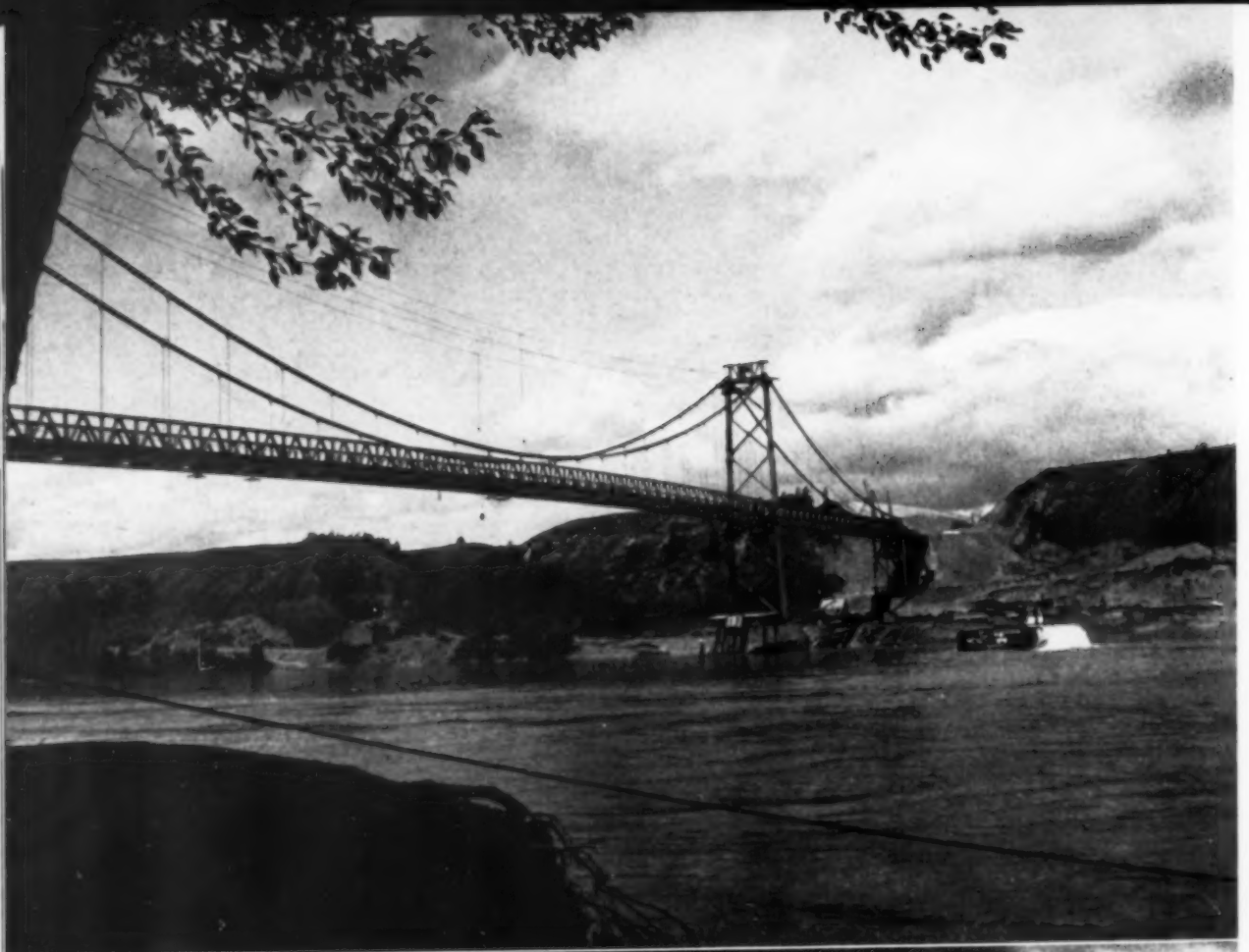
And here lies the greatest unspoiled recreation land in the world to-day. The high speed and high pressure of modern life have made the annual vacation not merely a pleasurable interlude but an essential to health and efficiency. With the return of peace, tourism will undoubtedly become one of Canada's greatest industries, and the Great North will have its share. That "temporary population" will furnish employment for a permanent

population engaged in servicing it, and so support a substantial number of inhabitants on an enduring basis. This, however, will not happen immediately the war is over, because the highway that will be handed over to Canada will be a military road and not a tourist highway. Much improvement in the road will be necessary before it becomes a highway such as tourists have become accustomed to on this continent.

In the logical development of the new Northwest and Alaska, Canada and the United States should step side by side. This they are doing. The Alaska Military Highway and the Canol Pipeline are evidences of freewill international co-operation on the grand scale. They are proof that two nations can work together without worrying too much about who gets the benefit, provided each gets some. What has been begun in the North Pacific Planning Project is a good omen as to what may be accomplished, not only there, but elsewhere.

Important in the services rendered by the new Alaska Highway is the furnishing of supplies to a chain of northern airports which will be helpful in peace as well as in war.





SOME CANADIAN CITIES*

Regina, Saskatchewan, is Latin for "queen" and commemorates Queen Victoria. The name was suggested in 1882 by Princess Louise, Duchess of Argyll, the Queen's daughter and wife of the Governor General. When a southern route across the prairie was chosen for the Canadian Pacific Railway it became expedient to remove the capital of the Northwest Territories from Battleford to a central point on the line. W. D. Barclay, C.E., ran the survey line for the railway across the Waskana, then known as Pile of Bones Creek, Tp. 17-R 20-W 2nd, at present Regina, 13 May, 1882. The only settlers he found in the vicinity of the crossing were Thos. Sinclair Gore and Henry George Forsyth on section 24 and John Scott Johnson on section 18. On 24 June, 1882, the *Saskatchewan Herald*, Battleford, announced that the crossing had been selected by Lieutenant Governor Dewdney as the site of a new seat of government and headquarters of the Royal Northwest Mounted Police whose chief station then was Fort Walsh.

Saskatoon, Saskatchewan, is the Saskatoon or service berry. The original townsite, a quarter-section on the east bank of the river, was surveyed in 1883 by Frank L. Blake, D.L.S. It was located on a grant of 100,000 acres made to the Temperance Colonization Society, Toronto, which was chartered 14 March, 1882. The company paid \$200,000 for this area. A few houses, some of sods, but mostly of logs were built in 1883. Says James M. Eby of Saskatoon:—"In August there was a gathering of all the settlers on the site of the prospective city on which were two or three tents, but no other buildings. There were perhaps a score, possibly a few more of us all told. We raised a flag pole on which floated a Union Jack and amid speeches and merrymaking celebrated the founding of the City of Saskatoon. The day in August was the 19th, the 49th birthday of Mr. John N. Lake of Toronto, who had selected the townsite for the company and chosen the name Saskatoon for it in 1882. About a dozen names had been suggested but none had seemed appropriate. Then, in the words of Mr. Lake, "On the first Sunday in August, I was lying in my tent about 3 p.m. when a young man came in with a handful of bright red berries and gave them to me. After eating some, I asked where they were found. He said 'along the river bank'. I asked if people had a name for them. He said they were Saskatoon berries. I at once exclaimed, 'You have found the name of the town—SASKATOON'. The name was formally accepted by the directors that winter and entered in the minutes." The Post Office opened 1 October, 1884.

Calgary, Alberta, was so named in 1876 by Colonel James Farquharson Macleod of the Royal Northwest Mounted Police. It is the name of the ancestral estate of his mother's family, the Mackenzies, on the island of Mull, Scotland, which he had visited shortly before. Calgary is a Gaelic word, the meaning of which is disputed. In the fall of 1875 there was trouble with half-breeds and Indians in Prince Albert region and Major-General, E. Selby Smyth, commanding the Canadian

Militia, was sent from the East to investigate. He travelled across the prairie northwesterly from Winnipeg. Colonel Macleod, then in command of the Mounted Police whose headquarters were Fort Macleod, which he had built the previous year, was advised by telegraph to meet General Smyth at Red Deer with fifty men. At the conference one of the matters agreed on was that a police post should be established on Bow River. On his return south Colonel Macleod, who had earlier in the year established Fort Walsh in the Cypress hills, on 6 August, 1875, sent a troop under Inspector E. A. Brisebois to erect barracks on the west side of the Elbow and south side of the Bow, in the angle between the two rivers, a site evidently selected by Colonel Macleod before he went north. The buildings were erected by the I. G. Baker Company, a fur-trading concern which had a trading post of its own in the vicinity but on the east side of Elbow River.

Edmonton, Alberta, takes its name from Fort Edmonton, built in 1795, twenty miles distant down the North Saskatchewan River, by George Sutherland, Hudson's Bay Company, and so named probably as a compliment to his clerk, John Prudens, a native of Edmonton, near London, England. The site of the fort was on the north bank of the river a mile and a half above the mouth of Sturgeon River. Beside Fort Edmonton stood Fort Augustus of the North West Company, built a year or so earlier. Both trading posts were destroyed by the Indians and abandoned in 1807. New forts of the same names were built by the rival traders in 1808 on the slope of the high bank within the present city of Edmonton. The city is shown by its present name, that is, without the prefix "fort", on the map accompanying Milton and Cheadle's *The Northwest Passage by Land*, published in 1865. The Post Office opened 1 February, 1877.

Medicine Hat, Alberta, is a translation of the Blackfoot Indian name of the place, Saamis, meaning "headress of a medicine man". About 1882, W. Johnson, a member of the Royal Northwest Mounted Police, erected the first house of the future city on a site which is still known as the Johnson subdivision. The origin of the name Saamis is uncertain; one explanation connects it with a fight between the Cree and the Blackfoot tribes, when the Cree medicine man lost his war bonnet in the river; another with the slaughter of a party of white settlers and the appropriation by the Indian medicine man of a fancy hat worn by one of the victims; another with the rescue of a squaw from the South Saskatchewan River by an Indian brave, upon whose head a well known medicine man placed his own hat as a token of admiration of the act of the rescuer; still another story says the name was given to the locality because an Indian Chief saw in a vision an Indian rising out of the South Saskatchewan wearing the plumed hat of a medicine man; it is also alleged that the name was applied to a hill east of the town, from its resemblance to the hat of an Indian medicine man. The Post Office opened 1 July, 1883.

(To be continued)

*See June and July, 1943, *Journals*.

Upper left:—The great steel bridge which now spans the Peace River on the Alaska Highway.

Lower left:—On its course the Alaska Highway penetrates numerous heavily forested areas.



Bandswomen are a notable innovation in Canada's Armed Forces.

Left:—Trombonists of the C.W.A.C.

Below:—Brass band of the R. C. A. F. (W.D.) leads graduation parade at Rockcliffe.



Left:—Balmoral bonnets distinguish the uniform of C.W.A.C. pipers.

CANADIAN WOMEN ON ACTIVE SERVICE

INTRODUCTION

THIS war is really different. There hasn't been the old familiar flagwaving and fanfare along main street. It's the first Total War. Everybody is busy. Everybody is working. We've come to take for granted the universal lunch-box, the roar of planes overhead, the rumble of huge tanks on the pavements, the sight of women war workers in slacks and bandanas. And now we are almost ready to take for granted the women of our Armed Forces.

Women in the Forces were an innovation which Canadians were hesitant to accept at first, just two years ago. It was "unwomanly". If woman's place was not still exclusively in the home, it at least wasn't in the uniform of her country. There was gossip for a while. Even Commanding Officers did not want women cluttering up their establishments. That was at first.

The first trained detachments which went out to the camps and air stations changed that. The proof of the pudding was in the eating. It was only a matter of days before hard-bitten critics had to admit that those girls could do the jobs they had assumed just as well as any man, sometimes better. They quickly recognized, too, a change in the demeanour of the men: the men became a little more careful of their appearance — and their language.

Those first detachments have been followed by an ever-growing flow of Canadian young women into the Services. At present there are more than 32,000 in the Women's Royal Canadian Naval Service, Canadian Women's Army Corps and Royal Canadian Air Force. From all walks of life, they have taken over the jobs which were formerly done by men, thus releasing them to join their fighting comrades, the job for which they enlisted.

Starting with the taking over of such familiar duties as office work and the preparation and service of food, the women

of the Services have proved their adaptability to a steadily lengthening list of Service trades, many never before done by women, many done much better by women.

The only practical limits now on the scope of women's employment in the Services are their numbers and their physical inability to do the heavier types of work.

The range of duties now being performed by women speaks for itself. It includes such wide variety as radio operators and mechanics, transport drivers, meteorological assistants, cooks, waitresses, parachute packers, hospital, dental and laboratory assistants, teletype operators, clerks, secretaries, electricians, typists, radiologists, coding and decyphering messages, photographers, equipment assistants, motor mechanics, armament workers, pharmacists, tailors, handswomen, dietitians, postal clerks, laundresses, instrument

Even the big bass drum responds to the touch of a feminine hand.





October 1941 — first airwomen of the R.C.A.F. on parade at the W. D. Manning Depot, then in Toronto.
Wing Officer Walker is seen third from the front of the right file.



makers. Many of these trades are common to all three Services.

The Services sift out potential recruits carefully within the general qualifications: that they are between the ages of 18 and 45, in good health, have at least Grade VIII schooling and are single, or married without dependent children.

On acceptance, new recruits are given four to five weeks of basic training, the Navy at Galt, Ontario, the Army at Kitchener, Ontario, and Vermilion, Alberta.

All three Services now have detachments of women serving overseas.

Left:—First group to leave Canada were these airwomen, seen disembarking in Newfoundland.

CANADIAN WOMEN ON ACTIVE SERVICE

and the Air Force at Rockcliffe, Ontario, just outside Ottawa. There they are documented, inoculated, fitted with uniforms and completely equipped. The courses give considerable physical training and drill, instruct them in general Service regulations, etiquette and procedure. This is essentially a period of transition from civil to Service life.

With the completion of basic training the girls go to various trade schools where they are given specialists' courses in diverse trades for which they have been selected on a basis of experience and aptitude. These courses vary from two weeks to three or four months, and, in some cases, six months.

When the new recruit finally takes up her regular duties, she usually finds herself living in barracks. Her posting may be anywhere and will likely be changed within a year. The girls are encouraged to make their quarters as home-like as possible.

Their general welfare is a major consideration of their officers. Meals are the best and scientifically prepared. Health is closely watched, as is their social welfare. While the girls work hard and often long, they also have time for fun. They have their own recreation rooms, where they may entertain friends several evenings a week. Week-end passes are granted when routine permits.

Everything is supplied, including complete clothing, medical and dental service. In addition, a new recruit is given \$15 to buy lingerie and cosmetics. She receives a small amount every three months to maintain her supply of these personal things.

Pay rates for women were substantially increased in July, 1943. Originally women received approximately two-thirds of men's pay. This scale was increased so that now Service women receive four-fifths of the basic pay rate of the men. Trades' pay, which is additional to basic pay, is now equal to the men's. Allowances were also provided for dependent immediate relatives, and service men's wives, who themselves enlisted, were permitted to retain their Dependents' Allowance.

As the tempo of the war rises women are bound to play an increasingly vital role in Canada's Armed Forces. While the pool of available manpower is lower than ever, more and more men will be required to do the actual fighting, to man the ships, the planes, the tanks, the guns. That means more and more Canadian women will be required to take over non-combatant duties in the Services, just as the women of Britain, Russia, China and the United States have done in their hundreds of thousands.

The first detachment of Wrens embarking for service in Britain.



ROYAL CANADIAN AIR FORCE

By WING OFFICER WILLA WALKER, (W.D.)

Senior Staff Officer, Women's Division

THE Women's Division is part of Canada's blueprint for victory; a print in Royal Canadian Air Force blue. It is a monument to the foresight of those who, in war days of 1940, looked to a time when all-out aerial warfare would impose such requirements of manpower on the Dominion that womanpower would be needed in the second line.

For this there was precedent. The Royal Air Force, even before that time, had begun to rely on the Women's Auxiliary Air Force — the "WAAF" — for much of the ground staff duty that helps keep aircraft flying. During the Battle of Britain they proved more than worthy of the responsibilities that were theirs, accepting the rigours of active service life like veterans, and sticking to their jobs in the face of great danger.

Accordingly, the Canadian Women's Auxiliary Air Force came into being by Order-in-Council dated July 2nd, 1941. Shortly after its first recruits went on active service the name was changed to the Women's Division, recognizing the fact that it is not, and never has been, an auxiliary, but an integral part of the Royal Canadian Air Force.



Its purpose was clear — the replacement of men in ground duty categories by trained women: but at the start the Division became a storm centre of service discussion. The "pros", looking to the day when squadrons of airwomen would augment their overworked staff, argued with the "cons", who insisted that plenty of men were available for the work, without cluttering up their stations with women. It remained for the women themselves to settle the matter.

They enlisted, as men did, "for the duration". Their officers were granted the King's Commission after first entering the ranks. The first group reported for duty

Left:—H.R.H. Princess Alice, Countess of Athlone, Air Commandant of the Women's Division, reviews the first class to graduate. Wing Officer (then Flight Officer) Kathleen O. Walker, first commissioned officer of the W.D., at present senior officer overseas, accompanies H.R.H.

At top:—Out on the tarmac of a service flying school. Airwomen in dungarees and "station" caps help service training aircraft.





at the Service Flying Training School at Uplands, near Ottawa, on January 3rd, 1942. In the six months of its existence the Women's Division had enlisted and trained its first officers, enlisted its first squadrons of airwomen, and trained them, too, in the life of the Air Force.

At seven-thirty of a freezing morning, after an all-night journey in day coaches, they climbed out of big blue trucks and carried their kitbags around an ice-covered parade square to their barracks. Then they lined up in the drill hall to be interviewed and assigned to their duties. The "pros" nodded approval while the "cons" began to reserve judgment. Obviously, the airwomen could "take it".

That was the beginning. Afterwards, squadrons of airwomen went to new schools of the Air Training Plan week by week till every Service Flying Training and Bombing and Gunnery School of the R.C.A.F. had its staff of airwomen. The service grew, and so did its roster of duties: airwomen in the control towers, timing the

flying hours of student pilots; airwomen in the hangars as aircraft helpers, testing spark plugs, cleaning aircraft, doing light maintenance work; airwomen plotting student bombers' scores.

By June of 1942, the first group of operations' room clerks were completing training, preparing for duty in the secret "ops rooms" of Canada's coastal defence, where aircraft, shipping and submarine movements are charted. In July of that year, airwomen sailed for Newfoundland; the first to be posted for duty outside Canada. Less than a month later, a draft of airwomen, trained for Air Force clerical duties, left for Britain, the first draft of any of Canada's women's services to sail overseas.

Soon, airwomen entered the trade of photographer, taking an eleven weeks' course that qualifies them for more than mere shutter-snapping. They learn to load aerial cameras, to process films, to operate enlargers, to patch the pictorial mosaics that mark a "Target for To-night". Others,



Her Royal Highness chats with Wing Officer Willa Walker at a garden party given for women of the three Services at Government House, Ottawa, July, 1943.

Below:—Graduation Day at No. 7 Manning Depot, Rockcliffe, where all airwomen receive five weeks' basic training. Guests of the graduates view the parade from near the saluting base.

at tap-keys, studied the dit-dah-dit of Morse code, then learned to read that same code by Aldis lamp flashes; to interpret messages in semaphore, and to do minor repairs to radio equipment. This involves a six months' course, the same as that taken by airmen, and earns each graduate a "handful of lightning", badge of the wireless operator (ground).

Airwomen also entered the trade of meteorological observer, and now, on many stations, maintain 24-hours-a-day weather maps for the guidance of men who fly. They became teleprinters, too, and — completing their assumption of communications' work—went into the trade of code and cypher.

Thus, more men were released for flying duty or heavy mechanical work essential to flying. But woman's work was not forgotten. Shortly after airwomen began cooking for the service, came the innovation of qualified dietitians, enlisted as messing officers. Under their guidance,



ROYAL CANADIAN AIR FORCE

improved nutrition, more variety to menus, less waste, and more kitchen efficiency are attained.

Women doctors have had a place in the Division since the start. Qualified medical officers, who receive full rates of pay, are on duty at training centres of the W.D., at headquarters, and big Air Force hospitals in both Canada and Newfoundland.

Airwomen are now on duty in Canada from coast to coast, in Newfoundland, the United States and Great Britain. The call is for more and still more. The list of their trades grows as weeks pass, and includes many specialist duties such as aircraft recognition, radiology, and eye-testing aircrew for night vision. Some, having proved outstanding ability on their courses, are instructing both men and women in trades such as wireless and aircraft "rec". A parachute worker has invented a new type of patch, approved

by the Air Force for mending damaged chutes.

"The experiment is over. You are a novelty to the Service no longer, and soon we shall wonder how we got along without you," said the Chief of the Air Staff, Air Marshal L. S. Breadner, C.B., D.S.C., speaking to the Division exactly one year after its first recruits had commenced their training.

Airwomen are not enlisted for flying duty, but to do essential work in both training and operational fields of the R.C.A.F. On stations, they have their own barrack blocks and recreation centres, but share the messes of men of equal rank, and work side by side with them. The importance of their part in the R.C.A.F. is best shown by the many duties they perform when a bomber crew goes "on ops". It is equipment airwomen who issue the crew's flying suits and parachutes. Fabric workers and para-





1st row, top to bottom:—

C.W.A.C. radio mechanic learning her trade.

Anti-gas capes being mended by C.W.A.C. tradeswoman.

2nd row, top to bottom:—

Army laboratory assistants at work Side by side at the transmitter keys, airmen and airwomen wireless operators (ground) maintain Air Force communications.

Mending 'chutes—a fabric worker of the R.C.A.F.

3rd row, top:—

Even minor injuries get expert attention at once.

Bottom:—

Wren recruit is outfitted with shoes.

4th row, top to bottom:—

Meteorological observer—R.C.A.F.—at the theodolite, about to release weather balloon.

Equipment assistant, R.C.A.F., checks kit at clothing stores.

Stocks of uniforms checked in quarter-master stores by C.W.A.C. clerks.





chute packers have checked and folded the silk "umbrellas" that are a lifebelt of the air. Cooks and messwomen prepare the sandwiches that will be eaten miles away from the station and thousands of feet above it. Deft-fingered armament workers have tucked each machine gun bullet in its belt.

The crew must bail out? Probably a girl in blue will receive their distress signal at her wireless post. Another has packed the rubber dinghy that will save their lives. Yet another will be at the wheel of the transport that brings them back to the station, and if any are hospitalized because of exposure, airwomen will help the nurses and doctors bring them back to health. The telephone operators are Women's Division; so are the stenographers, the bookkeepers who log each minute of every aircraft's flying time, the teleprinters whose flying fingers send im-

portant coded messages. Others do instrument repair, mend the fabric of bullet-torn wings, or clean and check the aircraft for its next journey.

The training that fits them for this job of total war has been described as Canada's biggest programme of adult education, and points to profitable post-war careers in civilian life.

In two years, the strength of the Women's Division has expanded to a hundred times its original size. Its trades have grown from nine to more than forty. If there is still discussion as to the necessity of having uniformed women in the Royal Canadian Air Force, the voice of the "cons" is small and uncertain. Men who have worked with the sister service have only one complaint. They say there are not enough of them for the jobs that must be done.





Above:—Routine check-up of all 'chutes is a responsibility of parachute riggers of the Women's Division.

Left:—To familiarize themselves with problems of aerial photography, airwomen photographers get special flights during instruction.

Right:—The silk "umbrellas" are further inspected as they hang in their loft awaiting repacking.





"Doping" an aircraft, airwomen wear masks to protect them from fumes.



Aero-engine mechanic, R.C.A.F., does minor repairs to service aircraft.



Spot welding is done by Army girl in ordnance shop.



Automobile brakes are relined by C.W.A.C. mechanic.



C.W.A.C. armourer inspects rifles in Army ordnance shop.



Anti-gas equipment is repaired by C.W.A.C. mechanic at Salvage Depot in Toronto.



Wireless operators (ground), R.C.A.F., learn radio repairs as well as Morse.



C.W.A.C. ordnance worker files down metal fitting.



C.W.A.C. officer cadets at Ste. Anne de Bellevue, Quebec, on an afternoon route march along the Quebec countryside.

CANADIAN WOMEN'S ARMY CORPS

By LT.-COL. MARGARET EATON,
Assistant Adjutant-General (C.W.A.C.)

MORE than 13,000 women in Canada wear the insignia of Athene, Greek goddess of war and wisdom. They are members of the Canadian Women's Army Corps, an integral part of Canada's Armed Forces, now in its third year of active service.

The C.W.A.C.'s life is full of interest, but not easy. In many ways it parallels the life of her brother-in-arms; members of the Corps to-day serve not only within the Dominion, but overseas. Hundreds of them are mothers, wives and daughters of Canadians in uniform.

The results of their well-organized role in the nation's war effort are demonstrated daily in the camps, offices, store-rooms,

laboratories, and other branches of the Army. They do a score of jobs—in many cases with more speed and natural ability than men. They drive the heaviest of Army trucks, use highly-specialized technical equipment. Just as her civilian sister can now operate lathes and welding torches in munitions' plants, the C.W.A.C. can repair an automobile or adjust a gun-sight.

Those who have had an opportunity to study first hand the contribution of this Army say that its members have a new keenness, a new outlook on Canadian life, and a new determination to contribute more fully to the national development.

The story of the Canadian Women's



"Good Neighbour" policy is demonstrated by C.W.A.C. taking part in Detroit parade on July the Fourth

Army Corps goes back to early 1940 when the need to enlist women in the Canadian Forces became sharply apparent. All types of office workers with experience were urgently needed to handle the paper work of a rapidly-expanding Army. The need to staff the Corps of Military Staff Clerks, the Royal Canadian Army Service Corps, Royal Canadian Ordnance Corps, and administrative branches was a severe drain on the ranks of fighting men.

The women themselves were anxious to do their part. Many organizations were appealing to the Government for official recognition of their war role.

The final decision to form a corps of women whose chief task would be to replace soldiers in non-combatant duties was made during the summer of 1941. The Canadian Women's Army Corps was authorized by an Order-in-Council on August 13, 1941.

First recruits for the new Corps were attested in September, 1941, when com-

panies were set up in the eleven Military Districts of Canada. As the new Army took form, personnel were quartered in barracks wherever possible, going out daily to their places of Army employment. The Corps established its headquarters in Ottawa, the nation's capital. Lieut.-Col. (then Major) Joan B. Kennedy, of Victoria, British Columbia, was appointed Officer Administering. Thus did a new kind of force begin life.

In each of the country's Military Districts, affairs of local companies are now administered by the officer commanding, assisted by platoon officers. A C.W.A.C. staff officer is appointed to each Military District also to carry out staff duties in connection with the C.W.A.C. under the supervision of the District Officers Commanding.

Officers and other ranks of the Corps enlist for service anywhere in the world for the duration of the war and for 12



Above:—Much of the photographic processing for the services is handled by trained women.

Top left:—Thrill of the Women's Division photographic course—a "flip" with an aerial camera.

Left:—An airwoman motion picture projectionist throws the target on a screen, while student air gunners shoot it down.



Above:—A battery of tabulating machines at N.D.H.Q. under expert C.W.A.C. operation



Above:—Draughtswoman of the C.W.A.C. at work in Army Ordnance Depot, Toronto



Right:—Teleprinters maintain Air Force com-



Above:—An airwoman easily clears the bar at Rockcliffe station.

Left:—At Vermilion, Alberta, training centre, C.W.A.C.'s learn archery in off-duty hours.

Organized sport plays a large part in Service women's training, combining fun and exercise.



months after its conclusion, should their services be required.

Recruits are required to take a four weeks' training course at basic training centres. Here a special syllabus is given, and, upon completion of the course, the recruit is despatched to a Military District, there assigned to the job she will fill best.

Training is carried out on almost exactly the same lines as in the camps of the regular Army. While the C.W.A.C. does not receive arms drill, its members are instructed in the art of self-defence and in protection against enemy aircraft and gas.

Promotions in the Corps are made on a basis of merit. Officers come up from the ranks, and candidates are required to take Officers' Promotional Courses at an Officers' training centre. First commissioned rank in the C.W.A.C. is that of a second-lieutenant. In a similar fashion, promotion is made to non-commissioned and warrant officer ranks.

Army regulations are enforced in the Corps as far as they can be made applicable to women. The Army Act, the law by which British Armies throughout the Empire are governed, applies with certain amendments, to the C.W.A.C.

To-day the Corps has three high-ranking officers: Lieut.-Col. Kennedy, in charge of all training; Lieut.-Col. Margaret Eaton, in charge of administration, and Lieut.-Col. Mary Dover, Commandant of the Basic Training Centre at Kitchener, Ontario.



Lieut.-Col. Joan Kennedy, General Staff Officer Class I, in charge of all C.W.A.C. training.

Those who struggled with the formation and organization of the Corps can look back with pride on their achievement. In its brief two and a half years of existence, it has passed many a milestone.

Early in 1942, the first training centre was opened at MacDonald College, Ste. Anne de Bellevue, Quebec. In June, the first cadet course was started, and since that time graduation exercises have been held periodically. In July of the same year, Western Basic Training Centre was opened at Vermilion, Alberta. 1942 also

Lieut.-Col. Margaret Eaton, Assistant Adjutant-General (C.W.A.C.), who handles administration.



Lieut.-Col. Mary J. Dover, Commandant of the largest C.W.A.C. training centre, at Kitchener, Ontario.





A class of physical training students parades at C.W.A.C. officers' graduation at Ste. Anne de Bellevue.

saw the establishment of an Eastern Basic Training Centre at Kitchener, Ontario, with facilities for training 1,000 C.W.A.C. personnel a month. Highlight of 1942 was the arrival overseas in November of the first group of Canadian Women's Army Corps personnel.

Many trades' training establishments have been formed this year, which open new and varied trades to the personnel of the Corps. In February, C.W.A.C. National Defence Headquarters announced the establishment of a C.W.A.C. driving and maintenance wing at Kitchener, Ontario. Here selected members of the Corps are trained as drivers of motor transport vehicles following completion of their basic training.

On April 26th, twenty-one selected members of the C.W.A.C. commenced a mechanics' course at the Central Technical School, Toronto. On completion of the course certain of the successful candidates were posted immediately to Royal Canadian Ordnance Corps Workshops Sections. The remainder were given further instruction on predictors.

With the formation of a pipe band from a nucleus formed in Vancouver,

British Columbia, the Corps now has two bands, military and pipe.

In July of this year the C.W.A.C. personnel on duty in Washington, D.C., moved into the former residence of Under-Secretary of State, Mr. Sumner Wells.

Women will be taking their place with men behind anti-aircraft artillery. They will be trained as plotter-telephonists. Women in England have been used on similar duty for some months.

With the arrival of a fourth draft in Britain, C.W.A.C. overseas strength has been brought up to the six hundred mark. The demand for relatively small drafts continues steadily and will be met as required.

That members of the C.W.A.C. will continue their service to Canada after demobilization is indicated by the fact that this year's agenda includes the study of post-war rehabilitation plans through which they learn what further contributions they may make to Canada's future development. Thus, determined to be well equipped in Peace as in War, the girls of the Canadian Women's Army Corps resolutely fit themselves to keep pace with their brothers in khaki.



Above:—Grace and beauty demonstrated by a group of C.W.A.C. physical training students at Ste. Anne de Bellevue.



Right:—The three winners at an inter-Service women's athletic meet.



WOMEN'S ROYAL CANADIAN NAVAL SERVICE

By Commander ADELAIDE SINCLAIR, Director, W.R.C.N.S.

SIXTY-SEVEN girls in plain navy blue smocks stood at attention before Commodore H. E. Reid, Vice-Chief of Naval Staff, R.C.N., at Ottawa. They had lived in those smocks for four weeks—their basic training period as the first class of Wrens

in Canada—and now they were undergoing their official inspection and a formal march-past in the sole item of uniform yet issued to them by the Navy.

As he launched the first members of the Women's Royal Canadian Naval



At top:—Probationary Wrens on parade at the basic training establishment at Galt, Ontario

Left:—Part of the first detachment of Wrens to be drafted for overseas duty.

Service into their career with the Royal Canadian Navy, Commodore Reid told them: "You are badly needed by the Navy to replace men for active duty, and I know you will be welcomed by them."

That was September 26, 1942. The originals had come from every part of Canada to be the first women in the Royal Canadian Navy. From that group, the W.R.C.N.S. has grown to more than 3,500 members. Recruiting officers estimate that the Wrens will number 5,500 by March, 1944, filling jobs at ports, shore establishments and naval reserve divisions across Canada as cooks and secretaries, stewards and sail makers, typists and transport drivers, and all the dozens of categories which women can fill to release men who want to go to sea. Wrens are now in Washington, D.C., Newfoundland, and the United Kingdom, on active service.

After the first year of service by the women in Navy blue, their efforts were rewarded by increased pay and increased category pay, selection for overseas service, and an improved uniform with new hats. The Honourable Angus L. Macdonald, Minister of National Defence for Naval Services, included "womanpower" in his review of naval activities in the House of Commons in June, 1943, saying, "Generally speaking, the services performed by the Wrens will be domestic, administrative and clerical. I must say that those who have joined the Corps have adapted themselves with great enthusiasm and efficiency to naval life and service condition."

From the beginning, the new service relied on guidance from the Women's Royal Naval Service in Great Britain. Captain Eustace A. Brock, who had been serving overseas with the British Admiralty as Canadian liaison officer, was named as Director and returned in mid-April, 1942, to set the new organization in motion. He announced that the Canadian Women's Naval Service would follow closely the methods used by the Englishwomen who have distinguished themselves on both land and sea with the Royal Navy, since war began.

On May 12, 1942, three British Wren Officers arrived to assist him: Superintendent Joan Carpenter, Chief Officer Dorothy Isherwood, and Second Officer E. M. Sturdee, who, immediately upon consultation with Canadian officials, began a tour of Canada, picking out possible recruiting depots, examining prospective quarters and interviewing hundreds of

applicants from coast to coast. By May 18, there had been 800 applications from Canadian girls who wanted to join the Navy.

Requirements for enlistment were, primarily, good health and experience in the category applied for; this still applies. Selection of the first candidates, in August, was done by personal interview and this policy has been adhered to by recruiting officers since. Primary function of the Wrens is to release men in shore establishments of the R.C.N. for active service elsewhere. Women between the ages of 18 and 45, British nationality, of highest integrity and character, were the type sought and obtained.

Of the first class of 67, 22 Wrens were recommended for commissions, and many of the others were promoted to higher ranks as the months went by. Once trained, they were detailed to posts as recruiting officers, or to Galt, Ontario, where accommodation had been secured for a training establishment. Here, in five modern brick buildings, preparations were made for the incoming drafts of recruits, the first of which arrived in October. Somewhat bewildered and uncertain about their new life, they left 27 days later—enthusiastic Wrens.

Recruiting went on apace during the autumn months of 1942, as applicants were

Commander Adelaide Sinclair (right) admires watch presented to Captain Dorothy Isherwood by Canadian Wrens on latter's return to Britain.





Christening ceremony of H.M.C.S. *Conestoga*, Wren basic training establishment at Galt, Ontario

called up for training at Galt and then posted to duties at ports, inland establishments and Naval Service Headquarters at Ottawa. New drafts arrived each week, and have done so every week since October, 1942, with about 400 Wrens-in-training at Galt most of the time.

Early in November, it was announced that Her Royal Highness, the Princess Alice, Countess of Athlone, had graciously accepted an appointment as Honorary Commandant of the W.R.C.N.S., and she paid her first official visit to the Galt training ship in December. November also brought Chief Officer Betty Samuel to Canada on loan from the W.R.N.S., to assist in setting up an officers' training course, accompanied by Lieutenant-Commander Lorna Kellett as staff officer.

First Officer Doris Taylor had come to Canada in July to supervise Wren quarters and housekeeping arrangements. She was the first Canadian officer in the Wrens, and is now Lieutenant-Commander

Taylor, Chief Dietetics Officer at Naval Service Headquarters. The Wrens have a quarters' officer in charge of every establishment, a position unique among the women's services. Each is responsible for seeing that the girls have comfortable quarters and good food. Wrens have quarters which are as homelike as possible when accommodating large numbers, and the girls are encouraged to decorate their cabins and to remember that they are feminine, though in uniform for the duration.

In December, the former Seminarium on Rideau Street in Ottawa was taken over to provide accommodation for several hundred Wrens who were gradually entering Naval Service Headquarters as messengers, clerks, typists, stenographers and secretaries, and January saw the first Wrens posted to duties in the Fleet Mail Office at Halifax.

By February, 1943, six months after organization had begun, the Women's

WOMEN'S ROYAL CANADIAN NAVAL SERVICE

Royal Canadian Naval Service had more than 400 Wrens on active service, and this number had doubled by March. In February, the first Officers' Training Course was held in Ottawa, and the Service acquired the former Preston Springs Hotel to accommodate Wrens being trained at Galt. By the end of April there were 1,000 Wrens on active service, with about 230 at Naval Service Headquarters.

In March, Director Dorothy Isherwood succeeded Captain Brock who returned to England, as did Superintendent Carpenter.

April brought the first taste of foreign service for the Wrens, when eight were sent to Washington to serve on the staff of Rear-Admiral V. G. Brodeur, then Naval member of the Canadian Joint Staff. In May, the Honourable Mr. Macdonald paid an official visit to Galt, now commissioned as a ship of the Royal Canadian Navy, H.M.C.S. *Conestoga*. Lieutenant-Commander Isabel Macneill, of Halifax, as Commanding Officer of the ship, became

the first woman captain of a ship in the Canadian Navy. She was one of the original class of Wrens and acted successively as training officer, executive officer and commanding officer at the training establishment. The then-Director was given the rank of Acting Captain, W.R.C.N.S., July 1st, and was thus the first woman to hold that rank in the Canadian Naval Service.

In June, Wren officers' ranks had been renamed to correspond to the ranks of the R.C.N. rather than following the W.R.N.S. practice of calling them Third, Second and First Officer. In this respect, they vary from the English service, which, being an auxiliary service rather than an integral part of the Royal Navy, does not grant the King's commission to its officers.

Biggest news of the year to most Wrens was the announcement in August that the first group of W.R.C.N.S. members would proceed overseas shortly for service with the R.C.N. Application for

Navy and Air Force co-operate in staffing joint services 'operations' rooms on East and West Coasts.





One of the most important jobs assumed by women in all three Services is the cooking (in non-combatant areas). New Wren cooks here carry on their work under the guidance of petty officer cooks.



Wren cooks receive thorough training, realizing importance of their success on health and morale.



overseas duty may now be made by any Wren to her Unit Officer for consideration at headquarters. Twelve Wren ratings and two officers arrived in the United Kingdom on the first of September and took over jobs formerly done by English Wrens in the office of the Senior Canadian Naval Officer in London.

On August 15, another significant announcement was made, affecting Canadian Wrens. Captain Dorothy Isherwood had been recalled to her duties in the United Kingdom, together with Lieutenant-Commander Lorna Kellett who had been acting as Staff Officer for the Canadian Service. Two Canadian officers were appointed in their places—Commander Adelaide Sinclair as Director and Lt.-Commander Evelyn Mills as Staff Officer.

The Wrens celebrated their first anniversary throughout Canada on August 29, with a Birthday Ball in Ottawa—attended by the Chief of Naval Staff—, parades and parties at every Wren establishment. In Halifax, more than 1,000 Wrens took part in a march-past before Rear-Admiral Murray, and on all sides they were acclaimed for the contribution they had made in their brief history. From a cautious beginning they had advanced to hold an ever-increasing position in the part played by the Royal Canadian Navy in the war.

Staff changes, transfers, promotions, openings of new Wren establishments at Sydney, Nova Scotia, and Royal Roads and Givenchy, British Columbia, marked October as a busy month. Wren dietitians took over the Navy's meal planning, ashore and afloat, for both men and women.

A great deal of interest was shown in the announcement that new hats would be issued to Wrens within a few months: ratings to wear sailor-type berets for duty and felt tricorneres for walking out. Revision of uniform is soon to become effective, too, with finer blue serge in use, gold Canada flashes on the shoulders, and a new design of the two-piece blue uniform.

With increasingly important jobs opening to them, and the rapid growth of Canada's Navy demanding more and more ships and more men to fight them, the Wrens have a bright outlook for their second year. Heaviest responsibility is the supplying of Wrens in domestic categories, for cooks, stewards and laundry assistants are badly needed to replace men in these trades. They are needed, also, to staff ever-increasing numbers of shore establishments, where thousands of sailors are being trained for their jobs at sea.



Canadian Wrens know that the foundation laid by the Wren officers from Great Britain is adequate for any conceivable expansion, and, under the direction of an All-Canadian ship's company, the enthusiasm and capacity for hard work, which has been so well demonstrated, augurs well for the future.

Top:—New Wren hat is for duty.

Below:—The new tricorne is to be worn on "tiddly" or walking-out occasions





Above:—First sight of Britain—an early detachment of airwomen arrive overseas.

Top centre:—Wren recruits arrive at Galt for training.

Right:—Wren messenger delivers document.

Bottom centre:—Mail parade in C.W.A.C. barracks is high spot of the day.

Below:—Wrens handle many jobs in Fleet Mail Office at Halifax.





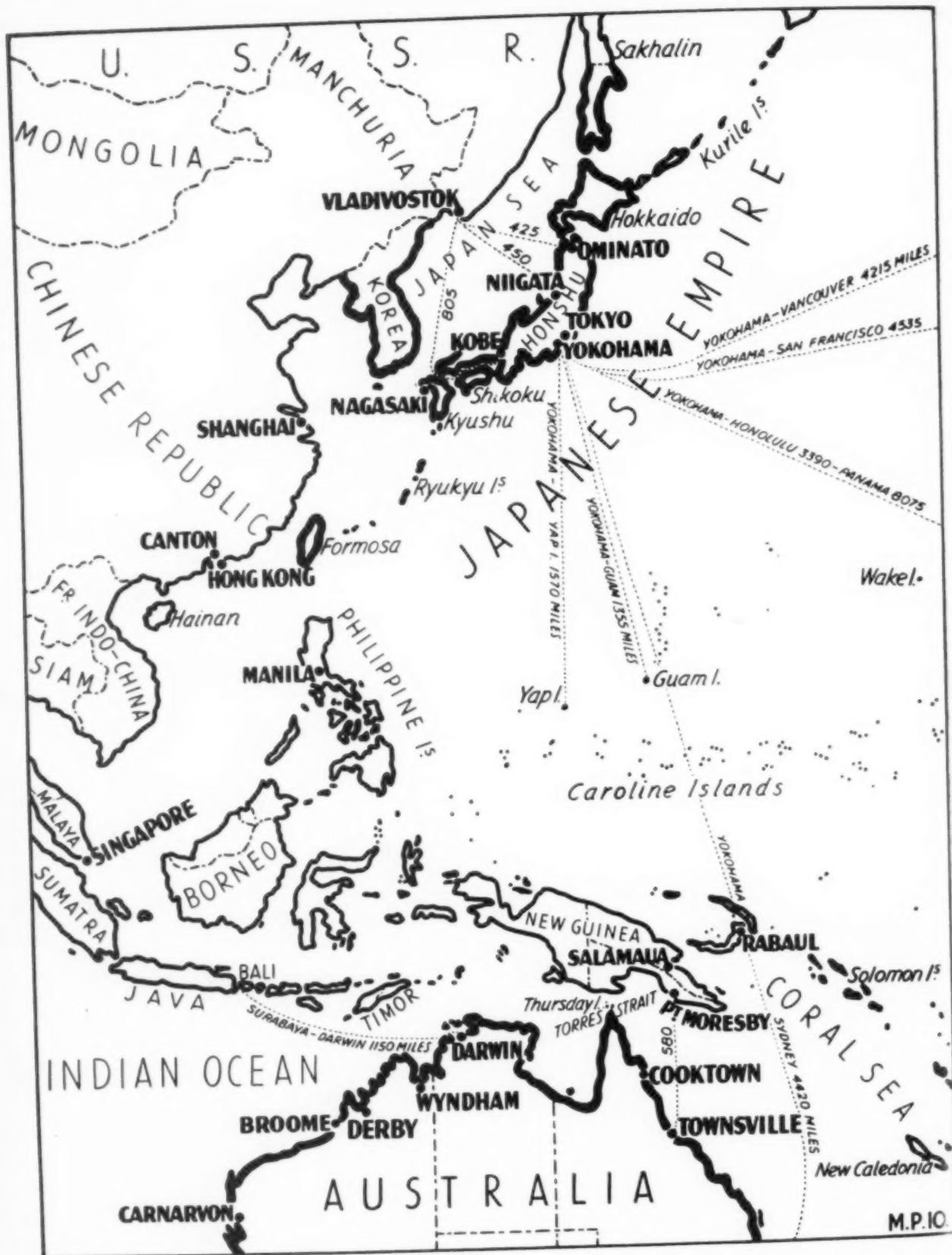
Above:—Canadian airwomen of R.C.A.F. Overseas Headquarters stroll through the blitzed ruins of London's East End.

Upper left:—Wrens dine cafeteria style.

Left:—Off-duty in London, an airwoman leans on the Embankment.

Below:—Wrens relax in quarters after a full day of duty.





SOUTHWEST PACIFIC SPRINGBOARD

by CAMPBELL DIXON

"STUDY large maps", advised one of Britain's famous statesmen. Look at a map of the Southwest Pacific—in particular the islands screening Australia and New Zealand—and the logic of present operations becomes clear. It shows how near the Japanese Expansionists came to realizing dreams once dismissed as fantastic.

With possession of the two Dominions as almost unlimited fields for emigration and breeding, the prolific Japanese could envisage the day when the Honorary Aryan master-race might crush their late allies the Herrenvolk—150,000,000 Japanese, in a couple of generations, employing a thousand million Chinese, Malays and Indians as an inexhaustible reserve of slave labour and cannon fodder in positively the final war, for the conquest of the world.

The Allies' Opportunity

A megalomaniac's pipe-dream? Only the complacent will think so. For all their fanatical egotism and ruthlessness, the Japanese are shrewd and far-sighted. Historians may one day agree that the most terrible danger western civilization has known since the Moors were beaten at Tours, was averted only by the Battle of El Alamein, which saved Egypt and prevented Germans and Japanese from linking hands in the Middle East; the United States air and naval victories of the Coral Sea and Kula Gulf, and the campaign, involving small numbers but immense stakes, in which the Japanese were defeated and for the first time driven back by the Australians in the nightmarish jungles of New Guinea.

The tide may surge forward again, and doubtless will; but such a favourable chance of overwhelming the defence can never recur. Every month now, as the Allies' superiority in factory power is increasingly felt, those defences are stronger, and the waves of invasion recede farther with every check.

Why is this? Why did the invaders at first sweep everything before them? Why, indeed, did they want Australasia at all?

Twenty years ago Baron Shidehara, then Foreign Minister and Acting Prime Minister, good-humouredly informed the writer that Japan had no aggressive designs against Australia. "Look at the

trouble the British Empire had with the small Boer Republic", he observed. "Australians are first-class fighting men, our lines of communication might be cut—no, no, I assure you our ambitions lie elsewhere—on the mainland of Asia."

Shidehara was very able, and probably sincere. But since then the violent Expansionists, naval and military, have gained control: Japan's policy, before and after Pearl Harbour, has so closely followed the Tanaka Memorial that there is no need now to doubt its genuineness. First, Southwest China, then French Indo-China, then the Philippines and Malaya (with a staggering sideswipe at Pearl Harbour), then the Dutch East Indies—in the mass a gigantic task but, taken one by one, simply a matter of concentrating superior force at a series of key positions remote from Allied reinforcements.

Timetable Went Wrong

And so the programme went with clockwork precision, until the only bases left to the Allies, large enough to support resistance, were Australia and New Zealand. If they went, India, the Persian Gulf, East and South Africa, would soon follow. A year ago it seemed a reasonable bet that half the population of the world would be ruled by Japan by Christmas, 1943. What has gone wrong with the timetable? Why is the Risen Sun slowly setting? Again the map makes the answer fairly clear.

Across the Pacific, it will be observed, lie two belts of islands. The first consists of those 2,500 dots known as Micronesia—the Little Isles. The second, 1,000 to 1,500 miles south of it, is a belt stretching from New Guinea, through the Bismarck Archipelago, to the Solomons.

It was in the first belt, in bases like Truk, secretly fortified despite solemn Japanese assurances, that preparations were made for the drive against American, Dutch and British possessions. It is in the second belt—then unprepared but since made formidable by brilliant improvisation—that the Allies have built up those air, sea and land bases which have smashed the enemy back with such heavy losses.

"A mandate", wrote a Japanese journalist, with unusual candour, "is a temporary arrangement. Japan will find a means to make it permanent." When the Marianas,

Carolines and Marshall Islands were taken from Germany and handed over to Japan nobody seems to have visualized the day when these specks on the map would block American aid for the Philippines and Singapore, and force convoys from the United States to travel a 10,000-mile route, far to the southward, before reaching Australia.

Under the Mandate, of course, fortification was forbidden; access was to be free to all. But the Japanese have always found it easy to prate of Bushido and honour, and, at the same time to lie and attack others—China, Russia and the United States in turn—without warning. Very soon foreigners found the islands barred to them; and if any one was persistent enough to investigate, like Col. Earl Ellis, of the United States Marines, he died—"of fever", explained the little men politely.

Natural Aircraft Carriers

"Naturally built aircraft carriers", was Admiral Suetsugu's description of the Carolines. These are coral atolls, built through slow ages by the polyp according to a standard pattern—a ring around a lagoon, hardly ever closed. Kipling's "lazy locked lagoon", though not quite so misleading as the dawn, on the road to Mandalay, that "comes up like thunder, outer China crost the bay", is at least a rarity. Tiny, only a few feet above sea-level, barren except for the palms that somehow thrive in the shallow sand above solid coral, these islands have only one use—as bases for aircraft, warships and supplies.

The Carolines and Marianas, on the other hand, are, to some extent, volcanic and mountainous, with harbours protected from naval attack by nature and lofty batteries. Truk is really a group of islands in a beautiful forty-mile-wide lagoon and Ponape, a naval base is guarded by Chokach Rock, 937 feet high. There is another good harbour at Kusaie. At Palau, screened by mountains against attack save by air, there is said to be anchorage for all the navies of the world. The chief air base is at Arakabesan.

These, then, were the strongholds from which the Japanese swept east to Pearl Harbour, west to the Philippines and the Indies. These rich prizes gained, the Japanese methodically established air and naval bases in the next stepping stones to victory—New Guinea, the Bismarck Archipelago, the Solomons, all wild countries with a primitive population and a handful

of whites. How easy they must have looked after Singapore, Manila and Java. The conquerors must have thought the end in sight.

Beaten to the Punch

Then something slipped. Complex though the details of the campaign are, the main fact is clear: The Allies beat Japan to the punch. Like the legendary Gen. Forrest, they got there fustest with the mostest, and the islands that were to have been stepping stones to Australia and New Zealand became a curtain of fire through which the invaders never penetrated.

True, they gained footholds, all the way from New Guinea to the Solomons. The former placed Darwin and other Australian ports within reach of bombers and (if Port Moresby had fallen) in danger of invasion; from the latter it was but a step or two to the New Hebrides, New Caledonia and Fiji, from which Japanese aircraft and ships could have devastated convoys bound for Australasia.

To guard the whole of the island chain with the Allied forces available was obviously impossible. New Guinea alone is one of the largest islands in the world, and the wildest and least explored. Its area, 344,000 square miles, is equal to that of France and Italy; it sprawls 1,600 miles from east to west across the waters north of Australia, from which it is separated by the 100-mile-wide Torres Strait.

Mountain ranges rising in the west to 15,000 feet make the island almost impassable from north to south; the rivers that flow from this range north and south through deep ravines bar travel east and west; dense jungle, torrential rains, terrific moist heat and fever make penetration outside coastal areas as difficult and dangerous as exploration of the upper Amazon.

In Path Of Asiatic Migrations

Lying in the path of the great Asiatic migrations to Oceania, New Guinea is inhabited by (a) a dark-brown, well-made people related to the Malays, to the Melanesians and to the Polynesians; and (b) a pygmy race in the mountains. Both races till recently were headhunters and cannibals. Civilizing work has been done by the Australian Government and the Missions; the natives have been given law and order, elementary education, better health and new and improved crops.

Politically, it should be noted, New

Guinea is divided into three parts. The largest, covering the whole of the centre and west, is Dutch New Guinea, with an area of 158,549 square miles (including the islands) and a population in 1938 of 312,000 natives (estimated), 1,270 Chinese and only 204 Europeans. There were also some Japanese ostensibly interested in timber and cotton concessions. Just before the war a Japanese newspaper said: "The New Guinea Petroleum Co. is preparing to start developing oilfields, reputed to be almost inexhaustible, a fact which is decidedly worth notice."

The two areas in the East ruled by Australia comprise (a) the original Papua, annexed by the State of Queensland in 1883 to forestall the Germans (it took five years' negotiation to induce the allegedly greedy Imperial Government to recognize the step); and (b) the Mandated Territory north of it, taken from Germany in the last war. Papua covers 90,000 square miles, with a native population estimated in 1938 at 300,000 and 1,488 whites. The figures for the Mandated Territory and other former German possessions are: New Guinea mainland, 69,700 square miles; Bismarck Archipelago, 19,200 square miles; Solomons, 4,110 square miles; total area, 93,000 square miles; estimated population, 666,000.

Germans Made Little Use Of Possessions

The natives remained loyal. Critics looking for a stick to beat the Empire used to allege, on little evidence, that Malaya fell through Fifth Column work. (As if primitively armed and untrained natives could be expected to play a part in the scientific warfare that found millions of French veterans helpless!)

In New Guinea the Japanese found no discontent and had to force captives into the role of porters. Some used in the exhausting trek over the Owen Stanley Range reported later that they were "compelled to carry supplies from Buna on jungle trails. They were given little food, and prodded with bayonets on the slightest provocation. No medical attention was provided when they fell sick. When some of them died their bodies were left unburied."

Highly superstitious but capable of learning simple trades, Papuans have done well in the police and other government services.

The fact that after thirty years' occupation the German population of New Guinea was only 1,000 in 1914 shows, like statistics for her African colonies, how

little use Germany really made of the possessions since proclaimed to be so essential to wealth and happiness. Under Australia the Mandated Territory was making considerable progress, largely owing to the mining of gold in the Morobe district, 60 miles by track over the mountains from Salamaua.

The pioneers covered the jungle trail laboriously in a week, taking their lives in their hands. Aircraft shortened the journey to half an hour, and in 1937-1938 the value of gold exported was nearly 8,000,000 dollars. Osmiridium, platinum, copper and iron ore have also been discovered, and before long minerals in the east and oil in the west may make New Guinea one of the boom countries of the world.

The Way To Japan Itself

Politically the Bismarck Archipelago is part of the Mandated Territory of New Guinea: in fact the capital of the whole territory was at Rabaul until earthquakes made a move to Lae, on the mainland, advisable. Ethnographically, it formed a bridge for the dark, negroid invaders from Asia who passed through the Indies to New Guinea and thence via New Britain to the Solomons, the New Hebrides, New Caledonia (the first French territory to declare for De Gaulle) and Fiji.

In this Melanesian belt ("Melanesians", i.e. "Black Islanders") you find perhaps the blackest race on earth, quite unlike the semi-Caucasian, light brown Polynesians. These were, and some still are, the legendary Cannibal Isles, with a dark record of tribal wars, feasts on "long pig", and the murder of missionaries. Civilization has scarcely touched some groups; to others it came in a generation. Fiji (annexed by Britain in 1874 after 15 years' pleading by King Thakombau, the former cannibal whose war club is now the Colony's parliamentary mace) has long collaborated in self-government and played high-class football and cricket.

The Solomons, though nowadays not quite so savage as the adjacent Hebrides, are still wild enough, but they have strategic importance. The clearance of the enemy from this group will make possible combined operations against New Britain from east and west. The recapture of that island and the enemy's chief base at Rabaul will first complete the Allies' barrier against invasion of Australasia, and then serve as a springboard for attack on the strongholds of the Indies and Micronesia, and so open the way to Japan itself.

Canadian Geographical Journal

INDEX VOLUMES XXVI AND XXVII, 1943

	Volume	Page		Volume	Page
Air, Northwest Passage by. J. A. Wilson (March).....	XXVI	107	Canadian Handicraft Old and New. J. Murray Gibbon (March).....	XXVI	130
Air Routes, Canada's Northern. D. B. Wallace (Oct.).....	XXVII	186	Canadian Women on Active Service (Dec.).....	XXVII	264
Alaska, Springboard of Attack. Joseph Wechsberg (April).....	XXVI	185	Royal Canadian Air Force Wing Commander Willa Walker.....		268
Alcock, F. J. New Brunswick, Past and Present (Aug.).....	XXVII	64	Canadian Women's Army Corps. Lt.-Col. Margaret Eaton.....		278
Aluminum, The Saguenay Valley—and. B. J. McGuire (Sept.).....	XXVII	130	Women's Royal Canadian Naval Service. Commander Adelaide Sinclair.....		286
Anderson, Alvar. Sweden—Surrounded but still Independent (Sept.).....	XXVII	122	"Canol" Project, The. Oliver B. Hopkins (Nov.).....	XXVII	238
Annual Meeting, The Canadian Geographical Society (March).....	XXVI	vii	Carnegie, R. K. The Quebec Conference (Sept.).....	XXVII	96
Are We Using Canada's Wealth Aright? Robert C. Wallace (May).....	XXVI	226	Cattle Ranching in British Columbia. Conrad O.B. ffrench (June).....	XXVI	298
Battling Nature's Blitzkrieg. H. G. Owen (April).....	XXVI	205	Central America. See The Pan American Highway (April).....	XXVI	157
Bell Telephone. See Battling Nature's Blitzkrieg (April).....	XXVI	205	Churches of Suffolk and Their Treasures. Philip J. Turner (May).....	XXVI	208
Bériau, Oscar A. Home Weaving in Canada (July).....	XXVII	17	Corry, J. H. Some Canadian Cities (June).....	XXVI	297
Bickersteth, J. B. Sussex (Jan.).....	XXVI	26	(July).....	XXVII	17
Brazil. Renée Tallantyre (Feb.).....	XXVI	68	(Dec.).....	XXVII	263
British Columbia. See The Royal Engineers, Columbia Detachment (July).....	XXVII	30	Cromie, F/O S. P. Home War (Oct.).....	XXVII	150
British Columbia, Cattle Ranching in Conrad O.B. ffrench (June).....	XXVI	298	Crowell, Ivan H. Teaching Handicrafts in Canada (Aug.).....	XXVII	84
British Columbia, The Bulb Industry of. R. J. Hastings (Oct.).....	XXVII	178	Dieppe, 19 August, 1942. Major C. P. Stacey (Aug.).....	XXVII	47
Bulb Industry of British Columbia, The. R. J. Hastings (Oct.).....	XXVII	178	Distribution of National Income and Purchasing Power. C. M. Short (April).....	XXVI	202
Burma—Land of Nationalists. F. Burton Leach (June).....	XXVI	284	Dixon, Campbell. Southwest Pacific Springboard (Dec.).....	XXVII	294
Camsell, Charles. Planning the New Northwest (Dec.).....	XXVII	251	Eaton, Lt.-Col. Margaret. Canadian Women on Active Service (Dec.).....	XXVII	278
Canada's Million and More Needlecraft Workers. J. Murray Gibbon (March).....	XXVI	144	Educational Opportunity, Freedom of. W. P. Percival (June).....	XXVI	289
Canada's Northern Air Routes. D. B. Wallace (Oct.).....	XXVII	186	Exploration. See Notes on the Coastal District... etc. (Feb.).....	XXVI	84
Canada's Wealth Aright. Are We Using? Robert C. Wallace (May).....	XXVI	226	ffrench, Conrad O.B. Cattle Ranching in British Columbia (June).....	XXVI	298
Canadian Army in Britain, 1942-1943. The. Major C. P. Stacey (June).....	XXVI	256	ffrench, Conrad O.B. Trinidad—The Crossroads of the World (April).....	XXVI	188
Canadian Cities, Some. J. H. Corry (June).....	XXVI	297	Folland, F/O N. A. Home War (Oct.).....	XXVII	150
(July).....	XXVII	17	Freedom of Education Opportunity. W. P. Percival (June).....	XXVI	289
(Dec.).....	XXVII	263	Gibbon, J. Murray. Canada's Million and More Needlecraft Workers (March).....	XXVI	144
Canadian Geographical Society, The. Annual Meeting (March).....	XXVI	vii	Gibbon, J. Murray. Canadian Handicraft Old and New (March).....	XXVI	130
			Glaciers of the Rockies and Selkirks. A. H. Lang (Feb.).....	XXVI	56

	Volume	Page		Volume	Page
Handicraft. <i>See</i> Canada's Million and More Needlecraft Workers (March).....	XXVI	144	Needlecraft Workers, Canada's Million and More. J. Murray Gibbon (March).....	XXVI	144
Handicraft. <i>See</i> Home Weaving in Canada (July).....	XXVII	17	New Brunswick, Past and Present. F. J. Alcock (Aug.).....	XXVII	64
Handicraft. <i>See</i> Hooked Rugs in Canada (May).....	XXVI	240	Northwest Passage by Air. J. A. Wilson (March).....	XXVI	107
Handicraft Old and New, Canadian. J. Murray Gibbon (March).....	XXVI	130	Northwest, Planning the New. Charles Camsell (Dec.).....	XXVII	251
Handicraft. <i>See</i> Teaching Handicrafts in Canada (Aug.).....	XXVII	84	Notes on the Coastal District of the Eastern Barren Grounds and Melville Peninsula from Igloolik to Cape Fullerton. T. H. Manning (Feb.).....	XXVI	84
Hastings, R. J. The Bulb Industry of British Columbia. (Oct.).....	XXVII	178	Owen, H. G. Battling Nature's Blitzkrieg (April).....	XXVI	205
Hawaii—Then and Now. Donald C. G. MacKay (July).....	XXVII	2	Pan American Highway. The. Herbert C. Lanks (April).....	XXVI	157
Hinds, E. M. Lapland (Jan.).....	XXVI	14	Pease, Mary Agnes. A Little Story of Service (Jan.).....	XXVI	48
Home War—The R. C. A. F. Guards our Shore. L. M. McKechnie, F/O N. A. Folland, F/O S. P. Cromie (Oct.).....	XXVII	150	Percival, W. P. Freedom of Educational Opportunity (June).....	XXVI	289
Home Weaving in Canada. Oscar A. Bériau (July).....	XXVII	17	Planning the New Northwest. Charles Camsell (Dec.).....	XXVII	251
Hooked Rugs in Canada. Ramsay Traquair (May).....	XXVI	240	Quebec Conference. The. R. K. Carnegie (Sept.).....	XXVII	96
Hopkins, Oliver B. The "Canol" Project (Nov.).....	XXVII	238	Ramsay, Alan. Winnipeg: City of Contrast and Beauty (Jan.).....	XXVI	44
I. O. D. E. <i>See</i> A Little Story of Service (Jan.).....	XXVI	48	R.C.A.F. <i>See</i> Home War (Oct.).....	XXVII	150
Lang, A. H. Glaciers of the Rockies and Selkirks (Feb.).....	XXVI	56	Red River Valley—Mapping Western Canada. Trevor Lloyd (May).....	XXVI	230
Lanks, Herbert C. The Pan American Highway (April).....	XXVI	157	Robinson, J. Lewis. Windsor, Ontario. A Study in Urban Geography (Sept.).....	XXVII	106
Lapland. E. M. Hinds (Jan.).....	XXVI	14	Rockies and Selkirks, Glaciers of the. A. H. Lang (Feb.).....	XXVI	56
Leach, F. Burton. Burma—Land of Nationalists (June).....	XXVI	284	Royal Canadian Navy, 1942-1943. The. Lt.-Com. Wm. Strange (Nov.).....	XXVII	202
Little Story of Service, A. Mary Agnes Pease (Jan.).....	XXVI	48	Royal Engineers, Columbia Detachment. The. Kathleen S. Weeks (July).....	XXVII	30
Lloyd, Trevor. Mapping Western Canada—The Red River Valley (May).....	XXVI	230	Russia. <i>See</i> Seaway across Top of the World (April).....	XXVI	178
MacKay, Donald C. G. Hawaii—Then and Now (July).....	XXVII	2	Saguenay Valley — and Aluminum. The. B. J. McGuire (Sept.).....	XXVII	130
McEachern, Ronald A. South America — and Canada (Jan.).....	XXVI	2	Seaway across Top of the World. E. R. Yarham (April).....	XXVI	178
McGuire, B. J. The Saguenay Valley — and Aluminum (Sept.).....	XXVII	130	Selkirks, Glaciers of the Rockies and. A. H. Lang (Feb.).....	XXVI	56
McKechnie, L. M. Home War—The R.C.A.F. Guards our Shore (Oct.).....	XXVII	150	Short, C. M. Distribution of National Income and Purchasing Power (April).....	XXVI	202
Manning, T. H. Notes on the Coastal District of the Eastern Barren Grounds . . . etc. (Feb.).....	XXVI	84	Simson, Colonel D. C. Unwin. The Vimy Memorial (Jan.).....	XXVI	40
Mapping Western Canada—The Red River Valley. Trevor Lloyd (May).....	XXVI	230	Sinclair, Commander Adelaide. Canadian Women on Active Service (Dec.).....	XXVII	286
Melville Peninsula, Notes on the Coastal District . . . etc. (Feb.).....	XXVI	84			

Volume	Page	Volume	Page
South America. See The Pan American Highway (April).....	XXVI 157	Turner, Philip J. The Churches of Suffolk and Their Treasures (May).....	XXVI 208
South America—and Canada. Ronald A. McEachern (Jan.).....	XXVI 2	Vimy Memorial, The. Colonel D. C. Unwin Simson (Jan.).....	XXVI 40
Southwest Pacific Springboard. Campbell Dixon (Dec.).....	XXVII 294	Walker, Wing Commander Willa. Canadian Women on Active Service (Dec.).....	XXVII 208
Stacey, Major C. P. Dieppe, 19 August, 1942 (Aug.).....	XXVII 47	Wallace, D. B. Canada's Northern Air Routes (Oct.).....	XXVII 186
Stacey, Major C. P. The Canadian Army in Britain, 1942-1943 (June).....	XXVI 256	Wallace, Robert C. Are We Using Canada's Wealth Aright? (May).....	XXVI 226
Strange, Lt.-Com. Wm. The Royal Canadian Navy, 1942-1943 (Nov.).....	XXVII 202	Wechsberg, Joseph. Alaska, Springboard of Attack (April).....	XXVI 185
Suffolk and Their Treasures, The Churches of. Philip J. Turner (May).....	XXVI 208	Weeks, Kathleen S. The Royal Engineers, Columbia Detachment (July).....	XXVII 30
Sussex. J. B. Bickersteth (Jan.).....	XXVI 26	Wilson, J. A. Northwest Passage by Air (March).....	XXVI 107
Sweden—Surrounded but still Independent. Alvar Anderson (Sept.).....	XXVII 122	Windsor, Ontario. A Study in Urban Geography. J. Lewis Robinson (Sept.).....	XXVII 106
Tallantyre, Renée. Brazil (Feb.).....	XXVI 68	Winnipeg! City of Contrast and Beauty. Alan Ramsay (Jan.).....	XXVI 44
Teaching Handicrafts in Canada. Ivan H. Crowell (Aug.).....	XXVII 84	Yarham, E. R. Seaway across Top of the World (April).....	XXVI 178
Traquair, Ramsay. Hooked Rugs in Canada (May).....	XXVI 240		
Trinidad—The Crossroads of the World. C. O'Brien French (April).....	XXVI 188		

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Operators on the Dominion Government's switchboard at Ottawa are performing one of the most vital war jobs in the country.

VOICES OF VICTORY

"When a W.A.C. takes over a telephone switchboard from a soldier, efficiency goes up about a thousand per cent. If there is one single thing the male species does with complete confusion and incompetence, it's running a switchboard."

So wrote War Correspondent Ernie Pyle in a recent despatch from North Africa.

Whether she's in uniform or not, the switchboard girl everywhere is doing a vital war job, and one that women can do most effectively. In speaking of women on war service, one cannot omit the telephone operator. Hers is a war service that is exclusively feminine.

It's not only skill in putting through priority calls in record time that makes a good operator. It is, above all, a pleasant voice, a tactful manner, and a patient cheerfulness that keeps the war calls flowing smoothly. Those are the qualities for which women are distinguished.

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It is the operator who makes it possible for the chief men in the United Nations to talk directly to one another, voice to voice — to hold a Quebec Conference without leaving their own offices.

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It is the operator who sets up the connections which enable the Army, Navy, and Air Force to get things done. Her work ensures the organization behind the lines that makes for victory.

One thousand telephone calls may be required during the construction of a single Army tank. It may take 63,000 calls, local and long distance, to launch one 10,000-ton merchant vessel. In handling these calls, the telephone girl takes her place on the assembly line. She helps to speed production.

And it is she who passes on the aircraft detection flashes which safeguard Canada's shores from invasion, and which ensure the mobilization of all the services organized to promote civilian safety in case of air attack.

Above all, her work maintains morale. It is she who takes care of lonely boys and girls in camps and barracks who want to talk to friends and families in distant parts of the country.

These are the jobs which thousands of telephone girls all over the country are performing every day, without uniforms and without production banners. These are the VOICES OF VICTORY.

EDITOR'S NOTE-BOOK

Dr. Charles Camsell, C.M.G., B.A., LL.D., Deputy Minister of Mines and Resources, needs no introduction to readers of the Journal, to which he has contributed a number of articles. Dr. Camsell was President of The Canadian Geographical Society for its first twelve years, since which time he has remained an active member of its Board of Directors and Honorary President. As Canadian Chairman of the North Pacific Planning Project, he brings to the writing of his article valuable technical training and an intimate knowledge of the region in which he was born, and where he has conducted many explorations personally and directed countless other scientific investigations. Dr. Camsell's article introduces a series which will be contributed next year by leading authorities in his Department for publication in the Journal.

Wing Officer Willa Walker, now chief ranking officer of the Royal Canadian Air Force (Women's Division) in Canada, has been with that branch of the service since the first group of recruits began their training in October of 1941. Daughter of Lieut.-Col. A. A. Magee, C.B.E. and Mrs. Magee of Montreal, Wing Officer Walker was born and went to school in that city. In 1934, as postmistress on the Empress of Britain, she cruised around the world, later acting as secretary to Lady Marler, wife of the Canadian Minister in Washington. In 1939, she married Captain David Walker of the Black Watch, then Lord Tweedsmuir's aide at Government House, and, after the outbreak of war, followed him to Scotland, where he had rejoined his regiment. Captain Walker was taken prisoner shortly after Dunkirk, and Wing Officer Walker returned to Canada. There she became active in "Wings for Britain", and later set up what eventually became the Canadian Prisoners of War Association. In October, 1941, as airwoman, second class, she entered the Royal Canadian Air Force, and was later commissioned as an Assistant Section Officer. First stationed at No. 1 Training Command, R.C.A.F., in Toronto, she supervised the establishment of airwomen on some of the first stations to which they were posted. In January 1942, she was transferred to the big basic training centre of the Women's Division, Rockcliffe, as Commanding Officer, and when Wing Officer Kathleen Walker, first commissioned officer of the Division, went overseas, Wing Officer Willa Walker (who is no

relation) was posted to the senior staff position of the Division at Air Force Headquarters. In her present work, she has travelled from coast to coast in Canada, and has visited R.C.A.F. stations in Newfoundland. She has watched the Women's Division grow from its initial one hundred and fifty recruits to its present strength, and seen its responsibilities increase accordingly.

Lieut.-Col. Margaret Eaton was born in Toronto, daughter of Col. and Mrs. R. Y. Eaton, and received her education in Toronto, England, the Sorbonne at Paris, Germany, and Italy. Within one week of the outbreak of war she volunteered to work for the Canadian Red Cross, and was in charge of the Group Contact Department, Toronto Branch, for several months. In November of 1939 she was appointed Assistant Commandant of the Office Administration Section, Toronto Detachment, and in August of 1940, was named National Adjutant of the Corps, in which capacity she was active until joining the Canadian Women's Army Corps. Lieut.-Col. Eaton enlisted September, 1941, and was immediately made C.W.A.C. Staff Officer at M.D.2, Toronto. In March of 1942 she was attached to Staff of Corps Headquarters, prior to her appointment in May as Staff Officer, M.D.4. In September she accompanied Major-General Jean Knox of the Auxiliary Territorial Service on her Canadian tour as A-de-C. In December Lieut.-Col. Eaton went overseas on attachment to the A.T.S. and to attend a Senior Officers' School. On her return she was promoted to the rank of Lieutenant-Colonel, and was appointed Assistant Adjutant-General at National Defence Headquarters, Ottawa.

Born in Toronto, the daughter of Dr. and Mrs. Overton Macdonald, Adelaide H. G. Sinclair went to school there and studied at the University of Toronto. For four years, from 1923 to 1926, she was Assistant to the Dean of Women at University College, and was on the staff of the U. of T. as Lecturer in Economics from 1927 to 1930. Graduate work in the London School of Economics and at the University of Berlin preceded her lectureship. During college days she was vice-president of her class, president of the Women's Under-graduate Association, and on extra-curricular executives. A member of Kappa Alpha Theta Fraternity at "Varsity", she became international president after four years as vice-president, following the death of her husband, Donald B. Sinclair, a Toronto barrister, in 1938. Her work as chief executive of an organization including 27,000 women members in the United States and Canada entailed a great deal of travel and organization. Mrs. Sinclair organized the women of Toronto for salvage collections there—a job which meant liaison work with every women's committee in the city—and was chairman of the Central Volunteer Committee for women war workers until the summer of 1942. She joined the foreign economics branch of the Wartime Prices and Trade Board in September of 1942, and left her work there to become a member of the Women's Royal Canadian Naval Service in March, 1943. After three months in England working with the W.R.N.S. and observing their methods closely, she toured Canadian Wren establishments with Captain Dorothy Isherwood before assuming the Directorship in September, when she was promoted to rank of Commander.

Campbell Dixon, who this month provides us with another article in the war-background series, is a widely travelled British journalist, critic and playwright, who has acted as Special Correspondent for Australian newspapers in the East Indies, China, Korea, Japan and Siberia.

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When the Quebec Liquor Commission was faced with the necessity of assuring a fair supply of alcoholic beverages for all, it based its issuance of permits on the number of regular customers served by the Commission, and also upon average personal purchase.

Many persons, however, have purchased for some time, and are continuing to purchase, the limit allowed, which even in the days of non-rationed purchasing they did not ever need in these amounts. It is obvious there are some of our citizens who are hoarding small stocks of alcoholic beverages — others who are consuming more than they ever did before — and still others who are making purchases for their acquaintances.

The full result of such tactics, which are essentially unfair, is now beginning to be felt. Shortages which would not now be noticeable had all our citizens abided by the regulations are causing annoyance and

inconvenience to a great many. The resale of beverages held by those who have purchased stocks they do not need has created a black market.

These are matters for which only a small group of citizens can be blamed, but unless stopped the inevitable consequence will be that the many must be penalized for the faults of the few.

You can do your part in helping to ease the present situation and prevent, as well, the possibility of a still lower ration of alcoholic beverages, by following these simple rules of good neighbourliness and fair dealing:—

1. Purchase only what you need, and keep below the maximum quantity allowed.
2. Do not let anyone else use your permit. It is not transferable.
3. Do not make purchases for others. They have their own permits or can obtain them.

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AMONGST THE NEW BOOKS

Physics and Philosophy by SIR JAMES JEANS, (Cambridge University Press, Cambridge, 1943), pp. VII, 222. \$2.75.

Sir James Jeans has capitalized on the popularization of science in an effective way. His latest book continues in the tradition which he has built up over a period of years. It has chapters headed: What are physics and philosophy? How do we know? (Descartes to Kant, Eddington); The two voices of science and philosophy (Plato to the present); The passing of the mechanical age (Newton to Einstein); The new physics (Planck, Rutherford Bohr); From appearance to reality (Bohr, Heisenberg, de Broglie, Schrödinger, Dirac), and Some problems of philosophy. A reading of the first two chapters and the last will give "an intelligible view of the main argument" (vii). It will be clear from the table of contents that the author presents the history of philosophy as a background to an understanding of the problems raised by scientific advance. "The tools of science are observation and experiment, the tools of philosophy are discussion and contemplation. It is still for science to try to discover the pattern of events, and for philosophy to try to interpret it when found." (81)

The author prefers to regard the book as the reflections of a physicist on some of the problems of philosophy. The title of the volume, the headings of chapters and the arrangement of its contents suggest a fundamental weakness. Philosophy is concerned with the whole range of knowledge including physics and cannot be regarded as separate from physics or as subordinate to it as the title implies. The changing place of physics in philosophy would have been a title implying a proper and more respectful relationship. Science, the author states, has added two new worlds—"the world of man lies just about half-way between the world of the electron and the world of the nebulae. Elaborate studies made with instrumental aid have shown that the phenomena of the world of the electron do not in any way form a replica on a minute scale of the phenomena of the man-sized world, and neither are these latter a replica on a minute scale of the phenomena of the world of the nebulae." (42-3) In the man-sized world, Kant elaborated forms such as space and time, of perception and understanding in the structure of the mind which perceives the world, while Alexander made mind the creation of space and time returning to "the Aristotelian conception of categories as forms of the world itself" 69. "Causality and the possibility of representation in space and time — prevail in the man-sized world but not in the small-scale world of atomic physics. They would seem to be ingrained rather than inborn, not so much laws that we thrust on nature as laws that we—with our limited knowledge of the world—have allowed nature to thrust on us." (71)

The contributions of physicists concluding in 1917 with Einstein's linking up of the laws of radioactive transformation with the laws of Planck's quantum theory brought about the complete abdication of determinism "not only from the domain of radioactivity, but from the whole realm of physics", 151. "The classical physics seemed to bolt and bar the door leading to any sort of freedom of the will; the new physics hardly does this; it almost seems to suggest that the door may be unlocked—if only we could find the handle. Determinism and free-

dom, matter and naturalism need to be redefined in the light of our new scientific knowledge. Modern physics has moved in the direction of mentalism." 216

Sir James Jeans has increased the debt of gratitude of lay readers for his clearness in stating problems of significance to modern thought. They will have the impression that they almost understand what he is writing about. But the root of error follows his approach as a physicist. It may be that the concepts of space and time break down in the approach to other worlds and that new concepts become essential, but it is significant that the worlds other than the man-sized world concern a very small number for a very small amount of time. There remain the problems on which physics and science generally have comparatively little to contribute — namely the problems of human society. In largely evading these they evade the problems of philosophy. The neglect of these problems and the naive of separating physics and philosophy as two voices constitute the chief danger of the efforts to popularize science. Energy is drained from the most difficult problems of civilization into a general glorification of the advances of science. Professor Toynbee in *A Study of History* has shown the significance of the myth as a tool for the unlocking of mysteries of civilization. We cannot disregard his achievements lightly in spite of the contributions of science.

W. A. INNIS

Proceedings of the Indiana Academy of Science, volume 51, 1941. (Indianapolis Bookwalter-Ball-Greathouse, 1942, \$3.00). This illustrated cloth-bound volume of 289 pages contains a vast amount of information on various subjects. As one would expect, there is recorded the minutes of the spring and winter meetings and the names of officers and committee members. An interesting feature is the proceedings of the Junior Academy of Science, and the presidential address of Paul Weatherwax, entitled, "The Indian as a Corn Breeder". In the necrology section tribute is paid to eleven well-known American scientists who died recently. The remaining two hundred and fifty-three pages are devoted to the papers presented. These are divided into the sections of anthropology, bacteriology, botany, chemistry, geology and geography, physics, psychology and zoology. Abstracts are given of papers not published in full. Geographical papers include: "Population changes in Indiana, 1840-1940", by S. S. Visher; "A population map for Indiana for 1940", by Wallace T. Buckley; "Some observations concerning the historical geography of Indiana, Part I", by J. E. Seitzer, and "The operation of the basic wind system", by A. V. Lott.

If one may venture to choose among so many excellent essays, one of exceptional interest is Erminie W. Voegelin's, "Notes of Ojibwa-Ottawa pictography". The author outlines the uses of pictographs as being able to convey messages, to furnish topographic information and to illustrate narratives, and relates the amazing ingenuity which the primitive Indians showed in transmitting their thoughts by picture writing. All in all, the book has an extremely wide appeal and is well worth the purchase price. Copies should be bought through the State Library, Indianapolis, Indiana.

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